A. Introduction
RM101 and RM102 are battery-powered, true-rms, auto-ranging digital multimeters with a 6000 count LCD display and backlight. Unless specially indicated, this manual applies to both models. All figures show the RM102.

B. Safety information
RM102/RM102 are designed to comply with safety standards of EN61010-1. To avoid possible electrical shock, fire, or personal injury, please read all safety information before you use the product.

1. Do not exceed the “maximum value” indicated in the Specification.
2. Examine the condition of the test leads and the insulation of the test before measuring voltage higher than 360V DC or 25V AC.
3. Disconnect the test leads from the circuit before changing the function.
4. Misuse of mode or range can lead to hazards, be cautious. "OL" will be shown on the display when the input is out of range.

C. Specifications

<table>
<thead>
<tr>
<th>Function</th>
<th>Range</th>
<th>Resolution</th>
<th>Accuracy</th>
<th>MAX Value</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Resistance</td>
<td>100Ω-100MΩ</td>
<td>0.01%+1</td>
<td>(1.2%+3)</td>
<td>999.9Ω (RM102 only)</td>
<td>No Voltage input at this mode</td>
</tr>
<tr>
<td>Capacitance</td>
<td>100pF-100μF</td>
<td>5%</td>
<td>(0.2%+2)</td>
<td>999.9μF</td>
<td>No Voltage input at this mode</td>
</tr>
<tr>
<td>Frequency</td>
<td>0.001Hz-10kHz</td>
<td>±0.01%</td>
<td>(0.1%+2)</td>
<td>999.9kHz</td>
<td>999.9MHz</td>
</tr>
</tbody>
</table>

D. Instruction
1. LCD display
2. Buttons
2a. HOLD: To hold the current reading, press this button and you will see "HOLD" on the display; press again to cancel. To turn on the backlight, press this button for more than 2 seconds; long press again to turn off.
2b. SELECT: To toggle between AC/DC, Diode, Continuity, Capacitance, or "℃/℉" (RM102 only), press this button.
3. Rotary Switch: To change mode or range.
   a. OFF
   b. DC
   c. AC/DC Voltage (V)/Voltage-V
   d. AC/DC Current (mA)/Current-mA
   e. Resistance/Continuity/Diode/Capacitance
   f. Frequency/Duty Cycle
   g. AC/DC Current (A)/Current-A
   h. Temperature (℃/℉ only)
4. Volt: Input terminal for voltage, resistance, capacitance, frequency, temperature. (RM102 only), current (mA), continuity, diode, and duty cycle measurements. (See section 6.6. Input terminals for current (I) measurements)
5. CIOM: Common terminal for all measurements.
6. 6th. Input terminal for current (I) measurements.

(2) Measure AC/DC Current
1. Connect the black test lead to the COM Terminal and connect the red test lead to the Volt terminals or the 20A Terminal (choose based on the current).
2. Turn the rotary switch to the Current-A mode or the Current-mA mode;
3. Press SELECT to toggle between AC/DC;
4. Break the circuit path to be measured. Then connect the test leads across the break and apply power;
5. Read the measured current on the display.
6. Do not measure current that exceeds the MAX Value as indicated in the Specifications;
7. Do not use the COM Terminal and the Current-A mode when you are measuring an unknown current. Then switch to the Volt Terminal and the Current-mA mode if necessary.

Do not input voltage exceeds 360V DC or 25V AC when you are at the setting of measuring current.

- - -
1. Connect the black test lead to the COM Terminal and connect the red test lead to the VΩHz Terminal.
2. Turn the rotary switch to the Voltage VMode or the Voltage V/Hz Mode.
3. Press SELECT to toggle between Auto DC or Dc.
4. Touch the probes to the correct points of the circuit to measure the voltage.
5. Read the measured voltage on the display.

*Caution:* Do not measure voltage that exceeds the MAX Value as indicated in the Specifications.

Do not touch high voltage circuit during measurements.

6. Measure Resistance

1. Connect the black test lead to the COM Terminal and connect the red test lead to the VΩHz Terminal.
2. Turn the rotary switch to the Resistance Mode, and the display will show “OL”.
3. Touch the probes to the desired test points of the circuit to measure the resistance.
4. Read the measured resistance on the display.

*Caution:* Don’t connect circuit power and discharge all capacitors before you test resistance.

Do not input voltage at the Resistance Mode.

7. Measure Continuity

1. Connect the black test lead to the COM Terminal and connect the red test lead to the VΩHz Terminal.
2. Turn the rotary switch to the Resistance Mode, press SELECT once to toggle to the Continuity Mode.
3. Touch the probes to the desired test points of the circuit.
4. The built in beeper will beep when the resistance is lower than 50Ω, which indicates a short circuit.

*Caution:* Do not input voltage at the Continuity Mode.

8. Measure Diode

1. Connect the black test lead to the COM Terminal and connect the red test lead to the VΩHz Terminal.
2. Turn the rotary switch to the Resistance Mode, press SELECT twice to toggle to the Diode Mode.
3. Connect the red probe to the anode side and the black probe to the cathode side of the diode being tested.
4. Read the forward bias voltage on the display.
5. If the polarity of the test lead is reversed with diode polarity or the diode is broken, the display reading shows “OL”.

*Caution:* Do not input voltage at the Diode Mode.

Disconnect circuit power and discharge all capacitors before you test diode.

(7) Measure Capacitance

1. Connect the black test lead to the COM Terminal and connect the red test lead to the VΩHz Terminal.
2. Turn the rotary switch to the Capacitance Mode, press SELECT three times to toggle to the Capacitance Mode.
3. Connect the red probe to the anode side and the black probe to the cathode side of the capacitor being tested.
4. Read the measured capacitance value on the display once the reading is stabilized.

*Caution:* Disconnect circuit power and discharge all capacitors before you test capacitance.

(8) Measure Frequency and Duty Cycle

1. Connect the black test lead to the COM Terminal and connect the red test lead to the VΩHz Terminal.
2. Turn the rotary switch to the Frequency Mode; press SELECT once to toggle to the Duty Cycle Mode if you want to measure duty cycle.
3. Touch the probes to the desired test points of the circuit.
4. Read the measured frequency/duty cycle value on the display.

*Caution:* The Frequency Mode only applies to measure high frequency with low voltage.

(9) Measure Temperature (KMT10 only)

1. Connect the black thermocouple probe to the COM Terminal and connect the red thermocouple probe to the VΩHz Terminal.
2. Turn the rotary switch to the Temperature Mode, and the display will show the measured temperature.
3. Touch the probes to the desired test points.
4. Read the measured temperature on the display.

*Caution:* Do not do input voltage at the Temperature Mode.

(10) Auto Power Off

1. The product automatically powers off after 15 minutes of inactivity.
2. Measure Voltage: If the beep is 5 times 1 minute before power off.
3. To restart the product, press SELECT button.
4. To disable the Auto Power Off function, hold down the SELECT button when turning on the product, you will hear the beeps if you have successfully disabled the function.

E. General Maintenance

Beyond replacing batteries and fuses, do not attempt to repair or service the product unless you are qualified to do so and have the relevant safety, function, and service instructions.

(1) Do not operate the product under hot, cold, flammable, explosive or magnetic environments.
(2) Clean the product with damp cloth and mild detergent; do not use abrasives or solvents.
(3) Remove the input signals before you close the product.
(4) Remove the batteries if you will not use the product for a long time to prevent possible battery leak.
(5) When the terminals on the display, batteries shall be replaced as below:
1. Unload the screw and remove the battery cover.
2. Replace the used batteries with new batteries of the same type.
3. Place the battery cover back and fasten the screw.
(6) Replace fuses as above steps. Use only fuses of the same type as the original ones.

F. Troubleshooting

If your product does not function as normal, the following steps may help you. If the problem still cannot be solved, please contact your dealer.

**Warning:**
1. Do NOT exceed the “maximum value” indicated in the Specification.
2. Do NOT input voltage at the Current Mode, the Resistance Mode, the Diode Mode, the Continuity Mode, or the Temperature Mode.
3. Do NOT use the product when the batteries or the battery cover is not placed properly.
4. Turn off the product and remove the test leads from the test points before changing batteries or fuses.

Problem Possible Reason
Display Malfunction Low battery, replace batteries
Symbol Replace batteries
No current input Replace fuse

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LIMITED WARRANTY AND LIMITATION OF LIABILITY

Customers enjoy one-year exchange, three-year warranty from the date of purchase. This warranty does not cover fuses, disposable batteries, or damage from accident, neglect, misuse, alteration, contamination, or abnormal conditions of operator or handling.