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The manufacturer assumes no responsibility for any consequences resulting from the use or misuse of this product. Product specifications and manual content are subject to change without prior notice.

Part Number: 7603231
GTIN: 6298043998314

MarMonix®

MIR 1000

Digital Insulation and Continuity Tester

Instruction Manual

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Product Overview

Marmonix MIR 1000 is a Digital Insulation and Continuity Tester that provides precise measurement of insulation resistance, AC/DC voltage, and small resistance. With features like auto range, polarization index, automatic discharge, and over-limit alarms, it ensures reliable testing for transformers, motors, cables, and other electrical equipment. It incorporates a large LCD screen for clear readings, along with live detection and high-voltage alarm functions to enhance safety. The instrument supports up to 12 hours of battery life or external DC power for extended operation.

Package Contents

- MIR 1000 Insulation Continuity Tester-1pcs
- 1.5V AA battery-6pcs
- Test lead-2pcs
- Crocodile clip-2pcs
- User's manual-1pcs
- Strap-1pcs
- Cloth bag-1pcs

Applications

- **Power and electrical equipment testing:** insulation resistance checks on transformers, motors, cables, and switchgear.
- **Industrial maintenance:** preventive testing of electrical installations and machinery.
- **Utility and field service:** on-site verification of insulation integrity and continuity.
- **Laboratory and R&D:** precise measurement of insulation materials and components.
- **Safety inspections:** compliance testing with live detection, over-limit, and high-voltage alarm functions.

Functions

1. Insulation resistance measurement
2. AC voltage measurement
3. DC voltage measurement
4. Small resistance measurement
5. Live detection of test resistance
6. Short-circuit protection of measured resistance
7. Automatic identification of AC and DC
8. Measurement data lock
9. Polarization index testing
10. Absorption ratio testing
11. Automatic discharge
12. Low battery reminder
13. Large LCD screen digital display
14. External DC power supply DC9V 1.5A
15. 10M internal resistance measurement
16. Over limit alarm
17. Auto range
18. Red alarm light, buzzer alarm.
19. High voltage alarm
20. Test voltage display

Safety Warnings

To ensure correct operation, carefully read this manual before use. It contains essential safety warnings and regulations. Strict compliance is required to protect both the user and the instrument.

Note:

- Read and understand the contents of this manual before operating the instrument.
- Use the instrument strictly in accordance with the test procedures described.
- Review all safety instructions in detail.
- Operation must be performed by qualified technicians under the specified conditions.
- The company assumes no responsibility for damage caused by improper use or violation of the safety regulations in this manual.
- The safety symbol "⚠" has three implications in this manual. Pay special attention to all operations marked with this symbol.

⚠ **DANGER – To avoid serious or fatal injury caused by improper operation.**
⚠ **WARNING – To prevent risk of electric shock.**
⚠ **CAUTION – To prevent damage to the instrument and ensure accurate measurement.**

⚠ DANGER

- Never measure live circuits above 600 V AC.
- Do not test in flammable environments; sparks may cause explosion.
- Do not operate if the instrument surface or hands are wet.
- Do not touch the conductive parts of the test pen during measurement.
- Do not open the battery cover while measuring.
- When measuring insulation resistance, do not touch the circuit under test.

⚠ WARNING

- Stop use immediately if the instrument is abnormal (e.g., broken housing or exposed metal).
- Use caution when working with voltages above 33 Vrms, 46.7 Vacrms, or 70 Vdc; risk of electric shock.
- Do not replace batteries when the instrument is wet.
- Ensure all test leads are firmly connected to the instrument.
- When opening the battery cover, confirm the instrument is powered off.
- Read and understand the instruction manual before operation.
- Follow the manual at all times and retain it for reference.
- Incorrect operation during testing may cause accidents or instrument damage.

⚠ CAUTION

- Before measuring insulation resistance, fully discharge the circuit under test and isolate it from all other power sources.
- If the test leads are damaged, replace them only with leads of the same model and specifications.
- Do not operate the instrument when the low battery indicator appears. Remove batteries if the instrument will not be used for an extended period.
- Do not store or operate the instrument in environments with high temperature, high humidity, flammable or explosive gases, or strong electromagnetic fields.

Implication of relevant icons of this instrument:

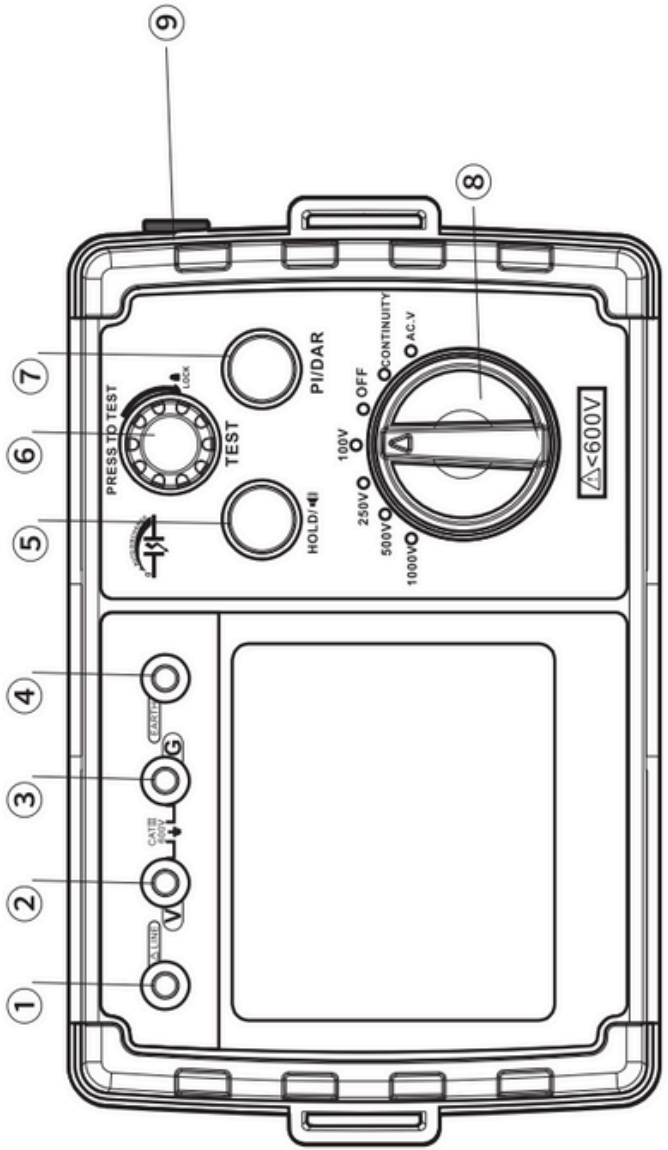
ACV	AC
⏚	grounding
⧈	The instrument is double insulated or reinforced

Applicable Standards

This instrument complies with IEC 61010–1, rated for CAT III 600 V and CAT I 2500 V applications.

Diagram of the unit

(1) A Schematic Diagram



① **LINE Hole :** Input terminal for live line connection.

② **V Hole**: Voltage measurement terminal.

③ **G Hole**: Guard terminal for insulation resistance testing.

④**EARTH Hole**: Grounding terminal for safety and accurate measurement.

⑤ **HOLD / Sound Switch Button**: Freezes the displayed reading; toggles sound alert on/off.

⑥ **TEST Button**: Initiates insulation resistance or continuity test.

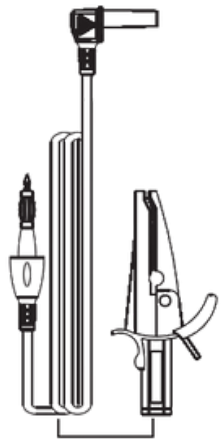
⑦ **PI / DAR Button**: Activates Polarization Index or Dielectric Absorption Ratio measurement mode.

⑧ **Rotary Gear**: Main function selector for measurement ranges and test modes.

⑨ **DC Port for External Power**: Allows connection of external DC 9 V supply.

⑩ **Black Test Lead with Crocodile Clip**: Negative (common) lead for circuit connection.

⑪ **Red Test Lead with Crocodile Clip**: Positive lead for circuit connection.



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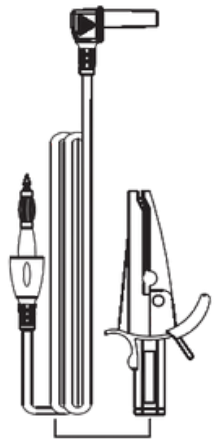
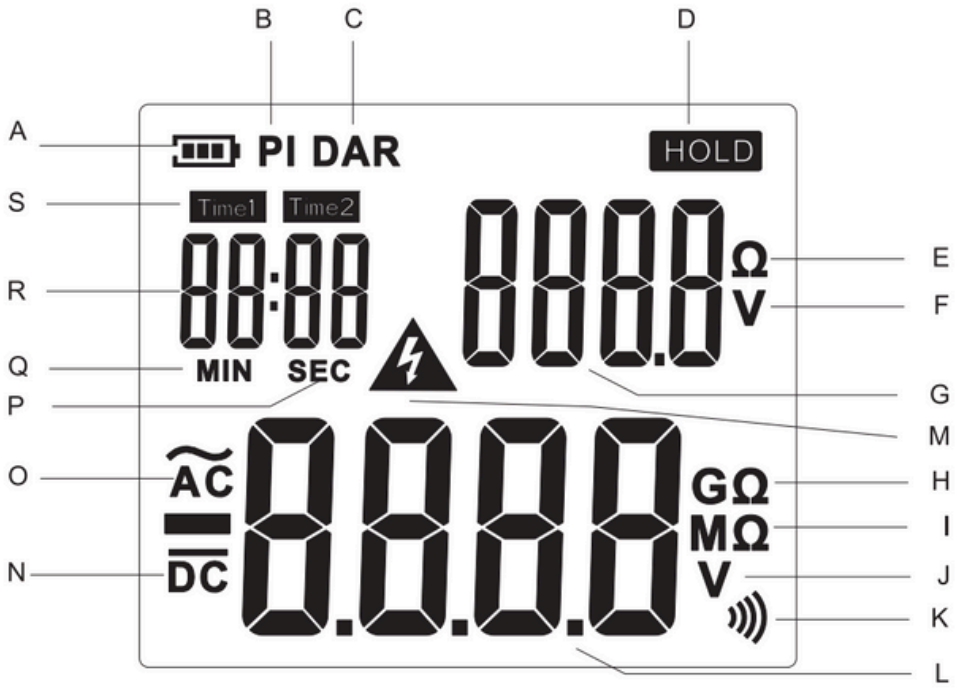


⑪

(2) Description of the symbols on the display unit



A. battery power
B. Polarization index measurement
C. Absorption ratio measurement
D. Reading lock
E. resistance unit
F. voltage unit
G. resistance or voltage value
H/I. resistance unit
J. voltage unit
K. beep icon
L. resistance or voltage value
M. warning icon
N. DC voltage
O. AC voltage
P. second
Q. minute
R. timing value
S. timing icon

Specifications

(1) Technical specifications

Technical parameters	Technical index
display:	Large-screen LCD (up to 500 counts).
Over limit indication:	Hi: The mark appears on insulation resistance range.
Auto range:	Higher range: 500 counts Lower range: 1 count (only on insulation resistance range)
Sampling Rate:	2 times / second.
Allowed altitude:	≤2000m (for indoor use)
Operation environment:	Temperature: 0°C-40 °C / Humidity: ≤85%
Operation environment:	Temperature: -20 °C -60 °C / Humidity: ≤90%
Overload protection:	Insulation resistance range: AC 1200V / 10 seconds Voltage range: AC 720V / 10 seconds
Withstand voltage:	AC 6000V (50 / 60Hz) / 5 seconds (between circuit and periphery
Insulation resistance:	≥1000MΩ/ DC 1000V (between circuit and periphery)
power supply	DC9V (6x1.5V AA batteries)
Current consumption:	Approximately 1.5A (maximum) (normally maintained at approximately 50mA)
Battery Life:	About 12 hours
Dimension:	176x110x77mm

(2) Insulation resistance test

Rated voltage	100V	250V	500V	1000V
Measurement range	0~1.5GΩ	0~5.5GΩ	0~5.5GΩ	0~5.5GΩ
Open circuit voltage	DC 100V +20% -0%	DC 250V +20% -0%	DC 500V +20% -0%	DC 1000V +20% -0%
Standard test Constant current	0.1MΩ load time 1mA~1.2mA	0.25MΩload time 1mA~1.2mA	0.5MΩload time 1mA~1.2mA	1.0MΩload time 1mA~1.2mA
Short circuit	约2.0mA			
Accuracy	±5%rdg±3%dgt(above 100KΩ)			

(3) Small resistance measurement

Open circuit voltage	About 5.0V
Measuring range	0.0~999Ω
Resolution	0.1Ω
Accuracy	± (2%+3)

(4) Voltage measurement

30~600V (resolution 1V):

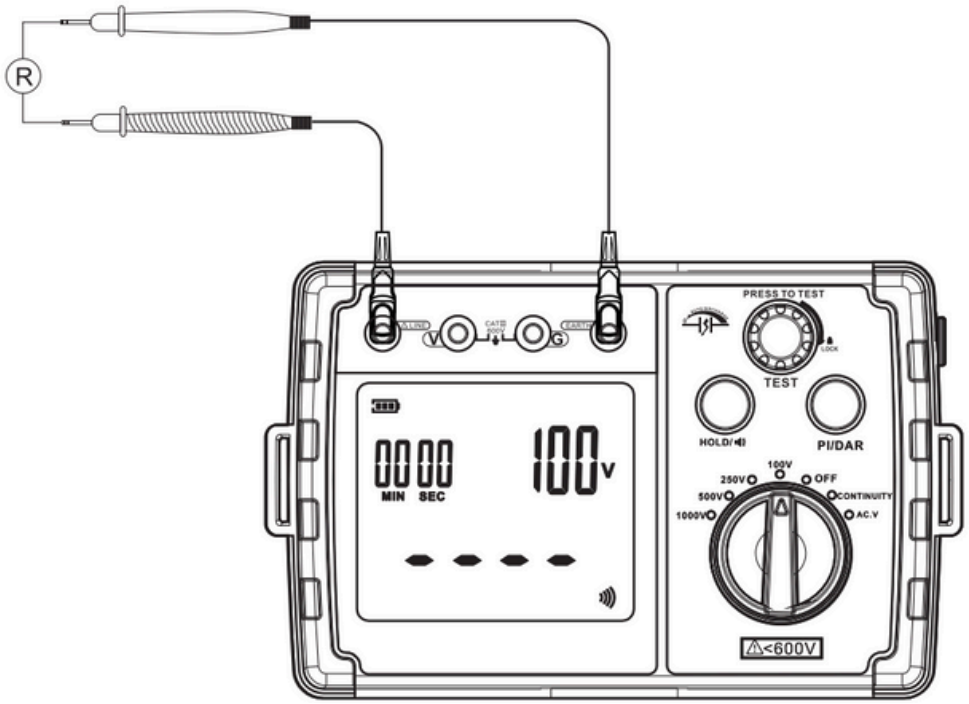
	DC voltage	AC voltage
Measurement range	±30~±600V	30~600V (50/60Hz)
Resolution	1V	
Accuracy	±2%rdg±3dgt	

Operation Instructions

(1) Measurement of insulation resistance

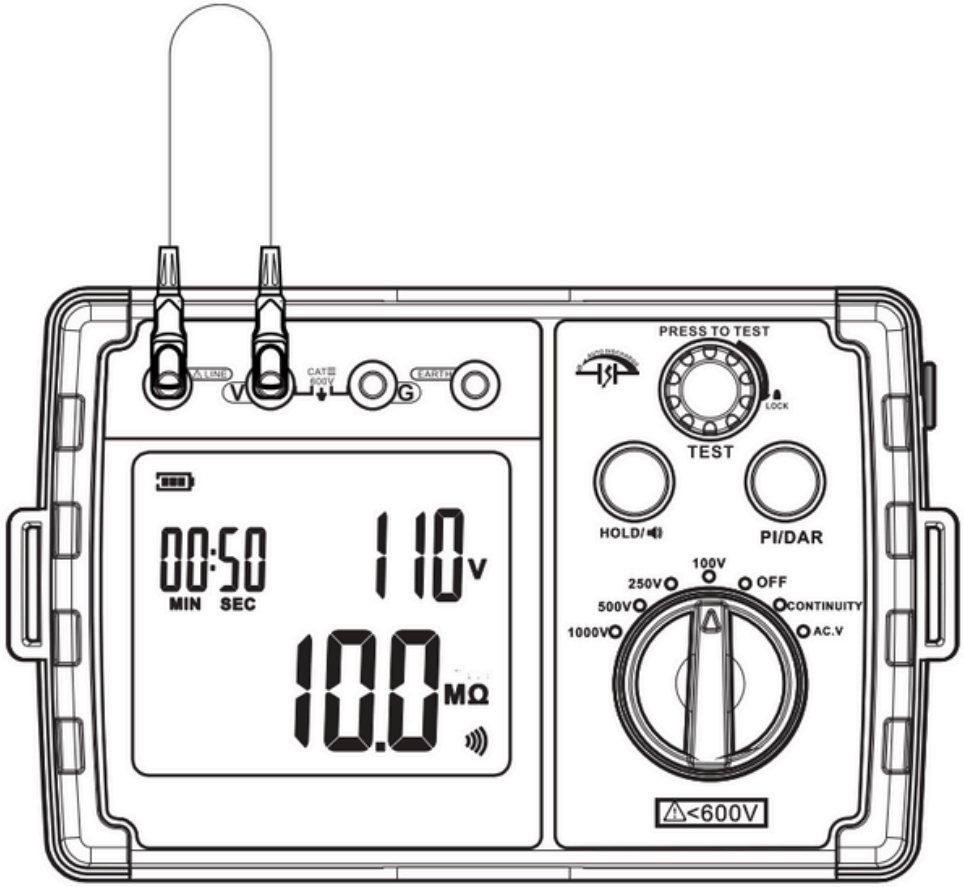
1. Before measurement, connect the red test lead to LINE and the black test lead to EARTH. Secure the tested object with the clip, confirm safety, then proceed with measurement.
2. Set the knob to the insulation resistance range. The selected gear value appears on the upper right of the screen, with "— — —" or the last measured resistance value below. Press the TEST button and turn clockwise to lock. High voltage is applied and measurement begins.
3. During measurement, the LCD displays: voltage (upper right), elapsed time (upper left), and resistance value (lower display). The warning icon, red alarm light, and buzzer ("didi") activate to ensure safety.
4. Press HOLD once to lock the reading (HOLD icon displayed). Press again to unlock. Long press HOLD to toggle the buzzer on/off.
5. After measurement, turn the TEST button counterclockwise and release. High voltage is turned off; measurement and timing stop. The gear value remains displayed with the resistance reading locked.
6. After completing the test, turn the knob to OFF to shut down the instrument.
7. Before starting measurement, press the PI/DAR button to switch to Polarization Index or Absorption Ratio measurement.

Pi (polarization index measurement)	10-minute insulation resistance value / 1-minute insulation resistance value			
Pi (polarization index measurement)	＞OR＝4	4——2	2.0——1.0	＜OR＝1
judgement standard	best	good	warning	bad
DAR (absorption ratio measurement)	1-minute insulation resistance / 30-seconds insulation resistance			
DAR (absorption ratio measurement)	1-minute insulation resistance / 15-seconds insulation resistance			
DAR (absorption ratio measurement)	＞OR＝1.4	1.25——1.0	＜OR＝1	
judgement standard	best	good	bad	



Note

- This instrument includes a built–in 10 MΩ precision resistor for self–test.
- Connect the test leads to the LINE and V terminals, set the knob to any insulation resistance range, and press the TEST button. The display will show 10.0 MΩ, as illustrated below.



(2) Small Resistance Measurement (0 ~ 9990 Ω)

1. Connect the test leads: red lead to EARTH, black lead to GND. Secure the test object with the clip and confirm safety before measuring.
2. Set the knob to the Small Resistance range. The upper-right of the display shows the test voltage (5.0 V), and the lower display shows "— — —" or the last measured resistance value.
3. Press and turn the TEST button clockwise to begin measurement. The upper-right display shows the voltage across the test object, while the measured resistance appears below.
4. If the measured resistance is less than 20 Ω, the buzzer sounds.
5. Turn the TEST button counterclockwise and release to stop measurement. The upper-right display returns to 5.0 V, and the resistance value remains locked.
6. After completing the measurement, turn the knob to OFF to power down the instrument.

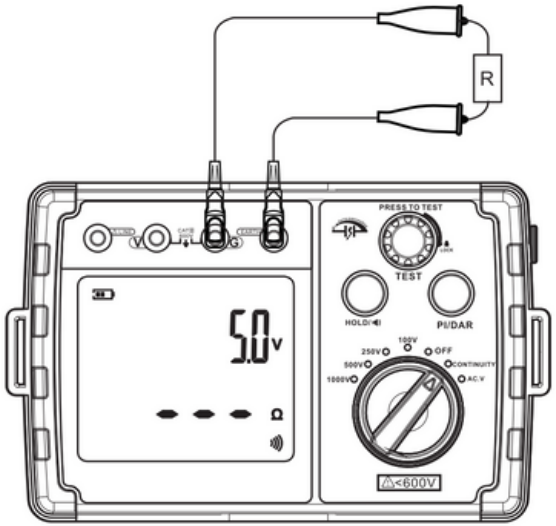


Figure 5

(3) Voltage Measurement

1. Connect the test leads: red lead to V, black lead to GND, as shown below.
2. Set the knob to the Voltage range. The upper-right of the display shows the maximum measurable voltage; the lower display shows the real-time measured value.
3. When measuring AC, the AC icon appears; when measuring DC, the DC icon appears. A negative value is shown if the red lead potential is lower than the black lead; otherwise, a positive value is displayed.
4. After completing the measurement, turn the knob to OFF to power down the instrument.

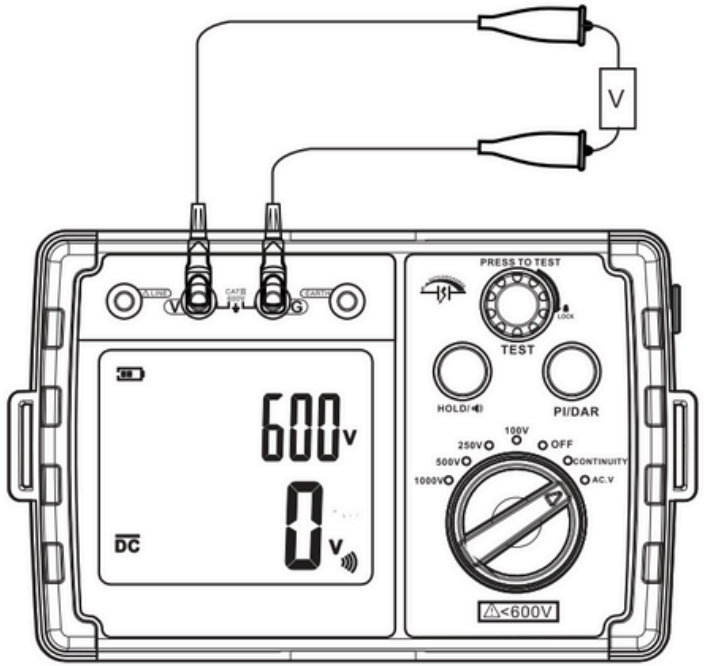


Figure 6

Other Items

(1) Attentions

Note:

- If the voltage between the red and black test leads is high, the warning icon will appear, reminding the operator of high voltage and the risk of electric shock.
- Pressing HOLD locks the reading, but measurement continues in the background. Even if a small value is displayed, do not consider the circuit safe; treat it as potentially high voltage.
- When measuring insulation or small resistance, if the warning icon appears before testing, the object may be charged. The TEST button will not activate measurement until the circuit is discharged.
- During small resistance measurement, if the object is charged and the lead voltage exceeds 5.4 V, measurement will stop automatically.
- Switching the rotary knob immediately stops the active measurement and disables high voltage output.
- With leads connected to EARTH and GND, never insert them into a high-voltage source. Doing so may damage the instrument and cause electric shock, fire, or explosion.
- In insulation resistance mode, the instrument stops automatically if the measured resistance is below 1 MΩ for 20 seconds, or 0 Ω for 5 seconds.
- If the low-battery icon appears on the LCD, replace the batteries or connect a DC 9 V power adapter.

(2) Maintenance

- Do not store or use the unit in environments subject to:
  1. Water splashes or excessive dust
  2. Air with high salt or sulfur content
  3. Air containing corrosive gases or chemicals
  4. High temperature or humidity (above 60 °C, 90%) or direct sunlight
- Do not disassemble the unit or attempt internal modifications.
- Do not use alcohol or thinner to clean the casing, as this may damage the LCD. Clean lightly with a small amount of clean water when necessary.

(3) Warranty

1. Refer to the warranty card for applicable terms.
2. The manufacturer assumes no liability for transportation damage, incorrect use, or unauthorized manipulation, alteration, or repair attempts.