

1. 将功能开关设为 。 “” 标记点亮。
2. 将测量线连接到测量物体上。
3. 处于导通状态时，蜂鸣器鸣响。

3244-60

CARD HITESTER

Instruction Manual

Warranty

Warranty malfunctions occurring under conditions of normal use in conformity with the Instruction Manual and Product Precautionary Markings will be repaired free of charge. This warranty is valid for a period of three (3) years from the date of purchase. Please contact the distributor from which you purchased the product for further information on warranty provisions.

EN

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HIOKI

www.hioki.com/



All regional
contact
information

HIOKI E.E. CORPORATION

81 Koizumi, Ueda, Nagano 386-1192 Japan

2309 EN

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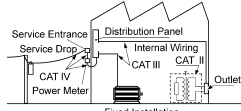
Europe only

*EU declaration of conformity can be downloaded from our website.

*Contact in Europe: HIOKI EUROPE GmbH

Heilmann-Park 2, 65760 Eschborn, Germany

hioki@hioki.eu



Using a measurement instrument in an environment designated with a higher-numbered category than that for which the instrument is rated could result in a severe accident, and must be carefully avoided. Use of a measurement instrument that is not CAT-rated in CAT II to CAT IV measurement applications could result in a severe accident, and must be carefully avoided.

Usage Notes

Follow these precautions to ensure safe operation and to obtain the full benefits of the various functions.

Preliminary Checks

- Before using the instrument the first time, verify that it operates normally to ensure that no damage occurred during storage or shipping. If you find any damage, contact your dealer or Hioki representative.
- To prevent an electric shock accident, confirm that the white portion (insulation layer) inside the cable is not exposed. If a color inside the cable is exposed, do not use the cable. Using the instrument in such conditions could cause an electric shock, so contact your dealer or Hioki representative for repair.



- Do not allow the instrument to get wet, and do not take measurements with wet hands. The instrument may be damaged.
- Do not use the instrument where it may be exposed to corrosive or combustible gases. The instrument may be damaged or cause an explosion.



- Do not store or use the instrument where it could be exposed to direct sunlight, high temperature or humidity, or condensation. Under such conditions, the instrument may be damaged and insulation may deteriorate so that it no longer meets specifications.
- This instrument is not designed to be entirely water- or dust-proof. Do not use it in an especially dusty environment, nor where it might be splashed with liquid. This may cause damage.
- Correct measurement may be impossible in the presence of strong magnetic fields, such as near transformers and high-current conductors, or in the presence of strong electromagnetic fields such as near radio transmitters.
- To avoid damage to the instrument, protect it from physical shock when transporting and handling. Be especially careful to avoid physical shock from dropping.

Specification

Measurement method	Double integration
Function	DC voltage (V), AC voltage (V), Resistance (Ω), Continuity check ()
Display	3-1/2 digits, LCD, 4199 count max. (except 500 V range) 3 digits, LCD, 549 count max. (500 V range)
Battery low display	lights
Sampling rate	2.5 times/second
Dimensions and mass	Approx. 55W × 109H × 9.5D mm, Approx. 60 g (Approx. 2.17"W × 4.29"H × 0.37"D, Approx. 2.1 oz.)
Accessories	Instruction Manual, carrying case, Battery (supplied with this product for monitor), Sleeves (red and black 1 piece for each)
Power supply	Battery CR2032 (3 VDC) × 1
Dielectric strength	4.29 kVrms sin (50 Hz/60 Hz for one minute) between input and case
Maximum input voltage	500 V DC/500 V rms (sin) or 3×10 ⁶ VHz (DCV/ACV)
Maximum rated voltage to earth	When sleeve is installed : CAT III (300 V) When sleeve is uninstalled: CAT II (600 V) (Anticipated Transient Overvoltage: 4000 V)
(50/60 Hz) Noise rejection ratio	NMR:40 dB or more (V) CMR:100 dB or more (V), 60 dB or more (V)
Maximum rated power	15 mVA
Continuous operating time	Approx. 150 hours (V)
Operating Environment	Indoors, Pollution Degree 2, up to 2000 m (6562-ft.)
Operating temperature and humidity	0°C to 40°C (32°F to 104°F), 80% RH max (no condensation)
Storage temperature and humidity range	-20°C to 60°C (-4°F to 140 °F), 70% RH max (no condensation)
Temperature characteristics	Measurement accuracy x 0.1 /°C (except 23°C±5°C)
Safety	:EN 61010-2-033:2012 EN 61010-031:2015
Standards accuracy	EMC :EN 61326

Accuracy

This product complies with CAT III (300 V), CAT II (600 V) safety requirements. To ensure safe operation of measurement products, IEC 61010 establishes safety standards for various electrical environments, categorized as CAT II to CAT IV, and called measurement categories.

Function	Range	Accuracy ^{±5}	Remarks	Over load protection
DCV [V]	420.0 mV	±2.0% rdg. ±4 dgt.	100 M Ω or over ¹	500 V DC/ACrms (sin) 3×10 ⁶ V+Hz
	4.200 V	±0.7% rdg. ±4 dgt.	Approx. 11 M Ω	
	42.00 V	±1.3% rdg. ±4 dgt.	Approx. 10 M Ω	
	420.0 V	±1.3% rdg. ±4 dgt.	Approx. 10 M Ω	
	500 V	±1.3% rdg. ±4 dgt.	Approx. 10 M Ω	
ACV [V]	4.200 V	±2.3% rdg. ±8 dgt.	Approx. 11 M Ω ¹	500 V DC/ACrms (sin) (one minute)
	42.00 V	±2.3% rdg. ±8 dgt.	Approx. 10 M Ω	
	420.0 V	±2.3% rdg. ±8 dgt.	Approx. 10 M Ω	
	500 V	±2.3% rdg. ±8 dgt.	Approx. 10 M Ω	
	420.0 Ω	±2.0% rdg. ±4 dgt.	3.4 V or less ³	
Ω	4.200 kΩ	±2.0% rdg. ±4 dgt.	0.7 V (typ.)	500 V DC/ACrms (sin) (one minute)
	42.00 kΩ	±2.0% rdg. ±4 dgt.	0.5 V (typ.)	
	420.0 kΩ	±2.0% rdg. ±4 dgt.	0.5 V (typ.)	
	4.200 MΩ	±5.0% rdg. ±4 dgt.	0.5 V (typ.)	
	42.00 MΩ	±10.0% rdg. ±4 dgt.	0.5 V (typ.)	
Continuity	420.0 Ω	±2.0% rdg. ±4 dgt.	3.4 V or less ³ 50 Ω ±40 Ω ⁴	

¹: Input impedance ²: Frequency range ³: Open terminal voltage

⁴: Threshold level (buzzer sound) ⁵: rdg. Displayed value, dgt. Resolution

Functions

Auto Power Save Function

- This function automatically switches to the power save state when 30 minutes have elapsed since the last operation.
- The auto power save function is activated automatically when the power is turned on. To restore from the auto power save state, turn the function switch to the OFF position once.

NOTE

To avoid battery depletion, turn the function selector OFF after use (the Auto Power Save feature consumes a small amount of current).

To Disable Auto Power Save

- Move the function switch from the OFF position to the (continuity check) position before all display segments appear.
- While all display segments appear (about one second), move the function switch from to Ω APS → OFF is displayed, and the Auto Power Save function is disabled. Turning the function switch momentarily OFF and then back on reactivates Auto Power Save.

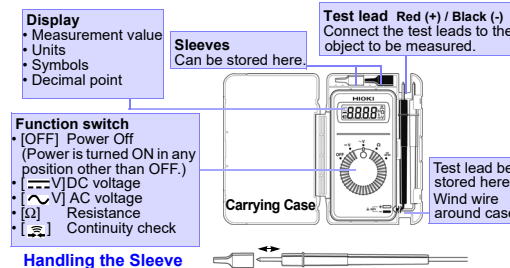
Auto-range Function

When measuring a DC voltage [V], AC voltage [V], or resistance [Ω], the measurement range is automatically set to the most appropriate range. Manual range setting is not possible.

Overflow Display

When the input exceeds the measurement range, "OF" is displayed.

Names and Functions of Parts



Removable sleeves can be attached to the metal pins at the ends of the test leads. To prevent a short circuit accident, be sure to use the test leads with the sleeves attached when performing measurements in the CAT III measurement category. Remove the sleeves from the test leads when performing measurements in the CAT II measurement category. For details on measurement categories, see "Measurement categories" in the instruction manual.



- The tips of the metal pins are sharp, so take care not to injure yourself.
- When performing measurements with the sleeves attached, be careful to avoid damaging the sleeves.
- If the sleeves are inadvertently removed during measurement, be especially careful in handling the test leads to avoid electric shock.

Measurement Method



Observe the following precautions to avoid electric shock.

- Always verify the appropriate setting of the function selector before connecting the test leads. Disconnect the test leads from the measurement object before switching the function selector.
- Never apply voltage to the test leads when the Resistance measurement, Continuity check functions are selected. Doing so may damage the instrument and result in personal injury. To avoid electrical accidents, remove power from the circuit before measuring.
- The maximum input voltage is 500 V DC/ACrms or 3 x 10⁶ VHz. Attempting to measure voltage in excess of the maximum input could destroy the instrument and result in personal injury or death.
- To avoid electrical shock, be careful to avoid shorting live lines with the test leads.
- For safety, test lead connections must always be made at the secondary side of a circuit breaker.
- The maximum rated voltage between input terminals and ground is CAT III (300 V), CAT II (600 V). Attempting to measure voltages exceeding 450 V with respect to ground could damage the instrument and result in personal injury.

Pre-Operation inspection

To avoid the possibility of electric shock or incorrect measurement, check the following items before using the instrument. If the operation check reveals any abnormalities, stop the check immediately and do not use the instrument.



To prevent an electric shock accident, confirm that the white portion (insulation layer) inside the cable is not exposed. If a color inside the cable is exposed, do not use the cable. Using the instrument in such conditions could cause an electric shock, so contact your dealer or Hioki representative for repair.

- For voltage measurement, short the test leads and check that 0 V is displayed.
- For Measuring Resistance or Continuity Check, short the test leads and check that 0 Ω is displayed.
- Measure a test item with a known value (battery, AC supply, resistor, etc.) to confirm that the known value can be displayed.

NOTE Periodic calibration and inspection is necessary in order to ensure that this instrument operates according to its product specification.

Measuring DC Voltage [V]

- Set the function switch to V.
- Connect the test leads to the object to be measured (Red (+) / Black (-)).
- Read the display.

NOTE Connecting the leads of negative and positive side oppositely, "+" is displayed. The displayed value may sometimes fluctuate due to induction potential even when no power is supplied. This, however, is not a malfunction.

Measuring AC Voltage [V]

- Set the function switch to V.
- Connect the test leads to the object to be measured. The polarity of leads can be ignored.
- Read the display.

Measuring Resistance [Ω]

- Set the function switch to Ω.
- Connect the test leads to the object to be measured.
- Read the display.

Continuity Check []

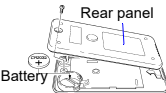
- Set the function switch to . The indication appears.
- Connect the test leads to the object to be measured.
- Conductivity is good when the buzzer sounds.

Replacing Battery



- To avoid electric shock when replacing the batteries, first disconnect the test leads from the object to be measured. After replacing the batteries, replace the cover and screws before using the instrument.
- Be sure to insert them with the correct polarity. Otherwise, poor performance or damage from battery leakage could result. Replace batteries only with the specified type.
- Battery may explode if mistreated. Do not short-circuit, recharge, disassemble or dispose of in fire.
- Handle and dispose of batteries in accordance with local regulations.
- Keep batteries away from children to prevent accidental swallowing.

- Remove the test leads from the test item, and power the instrument off.
- Remove the instrument from the case, and remove the screws on the rear panel.
- Remove the used battery.
- Being careful about the polarity, insert the new battery (CR2032) of the specified type.
- Replace the rear panel and fasten the screws.



CALIFORNIA, USA ONLY

This product contains a CR Coin Lithium Battery which contains Perchlorate Material - special handling may apply. See <https://dtsc.ca.gov/perchlorate/>