When 20 VAC or higher exists between LINE terminal and discharge the capacitance of the test object. Safety Standards, and has been thoroughly tested for safety prior to shipment. However, mishandling during Auto Power Save The power will only go off automatically 15 minutes after the last live circuit alert has been displayed. Meter (Internal magnet type taut band method) features. Be certain that you understand the instructions and precautions in the manual before use. This manual contains information and warnings essential for safe operation of the instrument and for maintaining it in safe operation conditions. Before using it, be sure to carefully read the following safety precautions.

### Safety Symbol
- Indicates that dangerous voltage may be present at this terminal.
- Indicates a prohibited action.
- Indicates that incorrect operation presents a significant hazard.
- Indicates AC (Alternating Current).
- Indicates a double insulated device.
- Indicates that incorrect operation presents an extreme hazard.
- Indicates that incorrect operation presents an electric shock hazard.
- Indicates that incorrect operation presents a danger of injury to the user or damage to the instrument.
- Indicates that a replacement of the instrument is required.
- Indicates that a service operation is required.
- Indicates that the product conforms to regulations set out by the EU Directive.
- Indicates that the electronic and electrical appliances may cause a fire if this appliance is defective.
- Indicates that the electronic and electrical appliances may cause a fire if not powered off immediately.
- Indicates that the product conforms to regulations set out by the EU Directive.
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- Indicates that the electronic and electrical appliances may cause a fire if this appliance is defective.
- Indicates that the electronic and electrical appliances may cause a fire if not powered off immediately.

### Symbols for Various Standards
- Indicates that the product conforms to regulations set out by the EU Directive.
- Indicates that the electronic and electrical appliances may cause a fire if this appliance is defective.
- Indicates that the electronic and electrical appliances may cause a fire if not powered off immediately.
- Indicates that the electronic and electrical appliances may cause a fire if this appliance is defective.
- Indicates that the electronic and electrical appliances may cause a fire if not powered off immediately.

### Warranty
- Warranty for the instrument.
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### Overview
This instrument is a powerful insulation resistance tester that measures the insulation level of electrical wires or equipment. This instrument is not designed for the production line and is not suitable for that purpose. Please use the STS502 Insulation Tester for the production line.

### Inspection and Maintenance
#### Initial Inspection
When you receive the instrument, inspect it carefully to ensure that no damage occurred during shipping. If damage is evident, or if it fails to operate according to the specifications, contact your dealer or HIOKI representative.

#### Maintenance and Service
To clean the instrument, wipe it gently with a soft cloth moistened with water or mild detergent. Never use solvents such as benzene, alcohol, acetone, ether, ketones, thinners or gasoline, as they can deform and discolor the case. If the instrument seems to be malfunctioning, contact your dealer or HIOKI representative. Pack the instrument so that it will not sustain damage during shipping, and include a description of existing damage. We cannot accept responsibility for damage incurred during shipping.

### Safety
- 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 avoid battery depletion, turn the function selector OFF after use. Battery may drain if the switch is not turned to OFF. The test lead plug comes with a protective cap. Please remove this cap before attaching it to the instrument.
- After measurement, turn the function selector to OFF. The cover will not close if the switch is not at OFF.
- To prevent the wrong equipment from being used, the instrument is designed for use indoors. It can be operated at temperatures between 0°C and 50°C without degrading safety. Maximum rated voltage to terminal 600 V AC (AC voltage function) Measurement Category III, Nominal system voltage 600 VAC max. Insulation Resistance measurement: DC voltage supply, current detection. Effect of humidity ±10% RH or lower (non-condensating). Effect of ambient temperature between 0 and 50°C without degrading safety. This instrument complies with CATIII safety requirements. Measurement terminal voltage characteristic: CAT II: ±5% of measuring range CAT IV: ±2% of measuring range
- To prevent damage to the instrument, protect it from physical shock when transporting and handling. Be especially careful to avoid physical shock from dropping. If the protective functions of the instrument are damaged, either remove it from service or mark it clearly so that others do not use it. Although this instrument is dust resistant, it is not completely dust- or waterproof. To prevent possible damage, avoid using in dusty or wet environments. The protection rating for the enclosure of this device (based on IEC60529) is IP40.

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

#### Preliminary Checks
- Follow these precautions to ensure safe operation and to obtain the full benefits of the various functions.
- 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.
During measuring, do not switch over to the other function or rated voltage.

Measurements Procedures

Preparing for Measurement
1. Attach the strap.
2. Insert the batteries.
3. Remove the sleeve from the tip of the test lead.
4. Connect the test lead (connect the black test lead to the EARTH terminal and the red test lead to the LINE terminal).
5. Adjust the needle to point to zero before measuring.
6. With the function selector at OFF, turn the meter movement zero adjuster with a screwdriver until the needle points to the center part of the scale.

Pre-measurement inspection
- Confirming the battery power:
  Set the function selector away from OFF and confirm the effective battery range indicator. Battery power is high when a green light is shown. Battery power is low when a warning light is shown and replacement is recommended. Battery charge status is shown when no light is shown. Please replace the battery after the light is off.

- Ensure that the test leads are not disconnected.
  1. Use the function selector to select Insulation Resistance measurement.
  2. Short the test lead tips.
  3. Confirm that the indicator needle points at 0 MΩ when pressing the MEASURE key.

- When using the L9788-10 Test Lead with Remote Switch, please check the following as well.
  1. Never touch the object being measured while the Insulation Resistance measurement function is on.
  2. Upon pressing the MEASURE key on the L9788-10, the MEASURE key lights up in red.

Insulation Resistance Measurement

Observe the following to avoid electric shock, short circuits, and damage to the instrument.
- When measuring insulation resistance, dangerous voltage is applied to the measurement terminals. To avoid electric shock, do not touch the probe.
- Never touch the object being measured immediately after measuring. There is danger of electric shock from the charge accumulated during high voltage testing.
- Discharge the subject conductor after measurement.
- Do not attempt to measure insulation resistance on a live conductor. Doing so could damage the insulation or cause an accident that might result in injury or death. Always turn off power to the circuit before measuring.

- Insulation resistance is the ratio of leakage current to applied voltage, and is therefore unstable. Depending on the specific object being measured, the needle may not stabilize, but this is not a meter malfunction.
- Press the MEASURE key fully down until a live circuit indicator lights up. If the button is pressed down fully, the needle will not move from 0 and a proper measurement cannot be made.
- Always release the MEASURE key after use.
- When inspecting an AC circuit including an appliance whose withstand voltage is lower than the test voltage or including an appliance connected to the appliance whose withstand voltage is unknown, it is recommended to remove that from the circuit for measurement.

Measurement of Voltage

- During measuring, do not switch over to the other function or rated voltage.
- Always turn off the breaker of the measurement line.

1. Use the function selector to select the function.
2. Connect the black test lead to the ground side of the object being measured.
3. Connect the red test lead to the line to be measured.
4. Press the MEASURE key. (To make continuous measurements, pull the button while the key is pressed down.)
5. Read the value after the needle has stabilized.

Set with Remote Switch are all exclusively designed for the HIOKI IR 4000 ANALOG HiTESTER series. Do not use for any other purpose.

Measurement range 0 V to 600 V

1. Turn the function selector to select the Insulation Resistance measurement function.
2. Short the test lead tips.
3. Confirm that the indicator needle points at 0 MΩ when pressing the MEASURE key.

- When measuring insulation resistance that contains a capacitor element, a charge proportional to the measurement voltage accumulates, and if undischarged could lead to an electric shock accident.
- Without removing the test leads from the item being measured, release the MEASURE key.
- Do not automatically discharge the item. During a discharge, the needle will return slowly to the infinity (∞) position.
- The discharge is completed when the needle reaches the ∞ position. The time required for discharge depends on the capacitance value.

Use of Test Leads

1. Function selector: Select measurement functions
2. MEASURE key: Press to measure insulation resistance.
3. LIGHT key: Press to turn on the light.
4. SCALE plate: Set switch plate to 0 or 1 depending on the test lead used.
5. Meter movement zero adjuster
6. EARTH terminal: Connect the black test lead
7. LINE terminal: Connect the red test lead
8. Effective battery range indicator: Green when battery power is high, red when battery power is low, and no light when battery is drained.
9. Live circuit indicator: Lights up when voltage remains between input terminals.
10. Insulation resistance scale
11. AC voltage scale
12. Indicator needle
13. Sleeve: Attach the sleeve removed from the tip of the test lead.
15. Test lead storage space: Store the test lead without having to remove it from the measurement terminal.