Digital

DROP PROOF

Built tough to withstand a 1-meter drop onto a concrete floor

5 ranges
Rated output voltage (DC)
Effective maximum indicated value

<table>
<thead>
<tr>
<th>Voltage Range</th>
<th>Resistance</th>
</tr>
</thead>
<tbody>
<tr>
<td>50 V / 100 MΩ</td>
<td></td>
</tr>
<tr>
<td>125 V / 250 MΩ</td>
<td></td>
</tr>
<tr>
<td>250 V / 500 MΩ</td>
<td></td>
</tr>
<tr>
<td>500 V / 2000 MΩ</td>
<td></td>
</tr>
<tr>
<td>1000 V / 4000 MΩ</td>
<td></td>
</tr>
</tbody>
</table>

Manage measurement data using Bluetooth® communication (IR4057-50 with Z3210 Only)

Transport to the Excel® file
Transport to GENNECT Cross

Open an Excel® file and select a cell. The measured value being held on the instrument’s display will be transferred to the computer and entered into the selected cell.

GENNECT Cross, a free app designed specifically for use with Hioki measuring instruments, lets you check and manage measurement results and create reports. The software provides a range of functionality that helps manage data in the field, including photographing measurement sites, placing measurement results on photographs, and saving handwritten memos.

Significantly improve testing speed using test lead with remote switch

Identify PASS / FAIL using light and sound

Convenient for inspections

Low resistance measurement
Perform EV and HEV continuity checks as well as resistance measurement of protective conductors in facility electrical equipment as defined by IEC 60364.

AC/DC voltage measurement
Automatically detect AC or DC for testing. Use as a tester thanks to DC voltage measurement functionality.

PV Ω dedicated function
Measurement is not affected even when the PV system is online.

One-touch Start and Stop

Single test
Continuous test

Prevent Accidental High Voltage Generation

Flashing light
Release lock

Under [500V], [1000V], or [PVΩ] settings, the RELEASE button will blink. Press to unlock the release of high voltages as an extra safety measure.

<table>
<thead>
<tr>
<th>Function</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single test</td>
<td>Measurement voltage is applied while MEASURE key is pressed</td>
</tr>
<tr>
<td>Continuous test</td>
<td>Lift and lock the MEASURE key to apply a continuous stream of voltage</td>
</tr>
</tbody>
</table>
# Lineup

<table>
<thead>
<tr>
<th>Measurement type</th>
<th>Standard</th>
<th>High-speed</th>
<th>PV</th>
<th>High-voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>IR4056-20</td>
<td>IR4057-50</td>
<td>IR4053-10</td>
<td>IR3455</td>
</tr>
<tr>
<td>Appearance</td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
<td>![Image]</td>
</tr>
<tr>
<td>Number of ranges</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Testing voltage (DC) / Effective maximum indicated value</td>
<td>50 V / 100 MΩ</td>
<td>125 V / 250 MΩ</td>
<td>250 V / 500 MΩ</td>
<td>250 V / 500 GΩ</td>
</tr>
<tr>
<td></td>
<td>250 V / 500 MΩ</td>
<td>500 V / 2000 MΩ</td>
<td>1000 V / 4000 MΩ</td>
<td>500 V / 1.00 TΩ</td>
</tr>
<tr>
<td></td>
<td>0.200 to 10.00 MΩ (50 V)</td>
<td>0.200 to 25.0 MΩ (125 V)</td>
<td>0.200 to 50.0 MΩ (250 V)</td>
<td>0.00 to 500 GΩ (250 V)</td>
</tr>
<tr>
<td></td>
<td>0.200 to 50.0 MΩ (250 V)</td>
<td>0.200 to 500 MΩ (500 V)</td>
<td>0.00 to 1.00 TΩ (500 V)</td>
<td>0.00 to 1.00 TΩ (1000 V)</td>
</tr>
<tr>
<td></td>
<td>0.200 to 1000 MΩ (1000 V)</td>
<td>0.00 to 2.00 TΩ (1000 V)</td>
<td>0.00 to 2.00 TΩ (2500 V)</td>
<td>0.00 to 10.0 TΩ (5000 V)</td>
</tr>
<tr>
<td>PV Ω measurement</td>
<td>N / A</td>
<td>N / A</td>
<td>✓</td>
<td>N / A</td>
</tr>
<tr>
<td>Leakage current</td>
<td>N / A</td>
<td>N / A</td>
<td>N / A</td>
<td>1.00 nA to 1.20 mA</td>
</tr>
<tr>
<td>DC voltage</td>
<td>600 V</td>
<td>600 V</td>
<td>1000 V</td>
<td>1.00 kV</td>
</tr>
<tr>
<td>AC voltage</td>
<td>600 V</td>
<td>600 V</td>
<td>600 V</td>
<td>750 V</td>
</tr>
<tr>
<td>Low resistance measurement</td>
<td>✓</td>
<td>✓</td>
<td>N / A</td>
<td>N / A</td>
</tr>
<tr>
<td>Displaying 1-min. values</td>
<td>N / A</td>
<td>✓</td>
<td>N / A</td>
<td>N / A</td>
</tr>
<tr>
<td>Comparator decision response time</td>
<td>0.8 second</td>
<td>0.3 second</td>
<td>0.8 second (PV : 4 s)</td>
<td>N / A</td>
</tr>
<tr>
<td>AUTO power save</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>AUTO range</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Data hold</td>
<td>MANUAL</td>
<td>MANUAL</td>
<td>MANUAL</td>
<td>MANUAL</td>
</tr>
<tr>
<td>Bluetooth® communication</td>
<td>N / A</td>
<td>(With Z3210)</td>
<td>N / A</td>
<td>N / A</td>
</tr>
<tr>
<td>Bar graph</td>
<td>N / A</td>
<td>✓</td>
<td>N / A</td>
<td>✓</td>
</tr>
<tr>
<td>Backlight</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Safety standard category</td>
<td>CAT III 600 V</td>
<td>CAT III 600 V</td>
<td>CAT III 600 V</td>
<td>CAT IV 600 V</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>CAT III 1000 V</td>
</tr>
<tr>
<td>CE</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Dustproof and waterproof</td>
<td>IP40</td>
<td>IP40</td>
<td>IP40</td>
<td>IP40</td>
</tr>
<tr>
<td>Drop proof</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>N / A</td>
</tr>
<tr>
<td>Power supply</td>
<td>LR03 x 4 alkaline</td>
<td>LR03 x 4 alkaline</td>
<td>LR03 x 4 alkaline</td>
<td>LR03 x 6 alkaline</td>
</tr>
<tr>
<td>Dimensions (W × H × D)</td>
<td>159 × 177 × 53 mm 6.26 × 6.97 × 2.09 in</td>
<td>159 × 177 × 53 mm 6.26 × 6.97 × 2.09 in</td>
<td>159 × 177 × 53 mm 6.26 × 6.97 × 2.09 in</td>
<td>260 × 250.6 × 119.5 mm 10.24 × 9.87 × 4.70 in</td>
</tr>
<tr>
<td>Mass</td>
<td>600 g (21.2 oz)</td>
<td>640 g (22.6 oz)</td>
<td>600 g (21.2 oz)</td>
<td>2.8 kg (98.8 oz)</td>
</tr>
</tbody>
</table>
**INSULATION TESTER IR4056-20, IR4056-21**

* Ranges in excess of 600 V/1000 V are outside the accuracy guarantee
* Minimum indicated value: 30.0 V
* Subclause 4.3 of Part 4 (interchanging of test leads) is not applicable when L9788-11 is used

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**INSULATION TESTER IR4057-50**

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**INSULATION TESTER (For Photovoltaic Generation Systems) IR4053-10**

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**Model** | IR4056, 57-xx | IR4052 | Basic accuracy
--- | --- | --- | ---
**Insulation resistance** | ✓ | ✓ | ✓ | ✓ |
**PV Ω measurement** | N/A | N/A | N/A | N/A |
**DC Voltage** | ✓ | ✓ | ✓ | ✓ |
**AC Voltage** | ✓ | ✓ | ✓ | ✓ |
**Low resistance measurement** | ✓ | ✓ | ✓ | ✓ |
**Testing voltage (DC)** | 50 V | 125 V | 250 V | 500 V | 1000 V
--- | --- | --- | --- | --- | ---
1st effective measuring range (MΩ) | 200 to 1000 | 200 to 2500 | 200 to 5000 | 200 to 10000 | ±2% rdg ±2 dgt
2nd effective measuring range (MΩ) | 10.1 to 1000 | 25.1 to 2500 | 50.1 to 5000 | 1010 to 4000 | ±5% rdg
**Testing voltage (DC)** | 500 V | 1000 V
--- | --- | ---
1st effective measuring range (MΩ) | 2000 | 4000 |
2nd effective measuring range (MΩ) | 501 to 2000 | 1010 to 4000 |
--- | --- | ---

---

**Order code**

**IR4056-20**
**IR4056-21**
**IR4057-50**
**IR4053-10**
**Z3210**
Function introduction  HIGH VOLTAGE INSULATION TESTER IR3455

**Step 5.0 kV step voltage test**

Voltage application time for each step: 30 s/1/2/5 min.

In this type of test, the voltage is gradually raised and the insulation resistance and leakage current change is measured. Two different step settings are available: 500 V 1 kV 1.5 kV 2 kV 2.5 kV and 1 kV 2 kV 3 kV 4 kV 5 kV.

**Polarization Index (PI) and Dielectric Absorption Ratio (DAR)**

The PI and DAR values which are used as an evaluation standard for insulation are automatically calculated.

**Data Memory Function**

The IR3455 provides a manual storage function for 100 data and a logging function for 10 data (360 times). Date and time are also stored, reducing the need for handwritten notes.

Install the included software on your computer and connect via USB to transfer the data stored in the internal memory of the IR3455 to your computer.

---

**Function introduction  INSULATION TESTER (For Photovoltaic Generation Systems) IR4053-10**

**Measurement not affected by generating PV**

The IR4053, which was designed for PV, can accurately measure insulation resistance without being affected by the generating PV.

**Accurate and safe measurement without creating shorts**

Normally, to accurately measure the insulation resistance of a generating PV, one needs to short the measured circuit. That's not necessary with the IR4053.
Analog Meters

**DROP PROOF**

Built tough to withstand a 1-meter drop onto a concrete floor

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**See better in the dark**

Bright LED

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**Significantly improve testing speed using test lead with remote switch**

REMOTE CONTROL SWITCH

L9788-11 (Option)

- Start and stop the test at the touch of a button
- Illuminate the test location with a bright white LED
- Work safely knowing that when the RED is lit, live wires, high voltage or electrical discharge is present

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**Check for Live Circuits**

The LIVE CIRCUIT LED will light up in red whenever the voltage exceeds 20 V AC between the LINE and EARTH terminals, and when at least 20 V DC is still remaining during the auto discharge.

---

**One-touch Start and Stop**

Single test

Measurement voltage is applied while MEASURE key is pressed

Continuous test

Lift and lock the MEASURE key to apply a continuous stream of voltage

---

**Flip the Cover**

Quick and easy storage without disconnecting the leads

---

**Check the Battery Status**

BATT : Hi

BATT : Lo

BATT : Dead
### Measurement parameters

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
<th>Testing voltage (DC)</th>
<th>Effective maximum indicated value</th>
<th>1st effective measuring range</th>
<th>2nd effective measuring range</th>
</tr>
</thead>
<tbody>
<tr>
<td>IR4016-20</td>
<td>1</td>
<td>500 V</td>
<td>100 MΩ</td>
<td>0.1 MΩ to 50 MΩ</td>
<td>0.01 MΩ to 0.1 MΩ or less 50 MΩ or more to 100 MΩ</td>
</tr>
<tr>
<td>IR4017-20</td>
<td>1</td>
<td>500 V</td>
<td>1000 MΩ</td>
<td>1 MΩ to 500 MΩ</td>
<td>0.5 MΩ to 1 MΩ or less 500 MΩ or more to 1000 MΩ</td>
</tr>
<tr>
<td>IR4018-20</td>
<td>1</td>
<td>1000 V</td>
<td>2000 MΩ</td>
<td>2 MΩ to 1000 MΩ</td>
<td>0.5 MΩ to 2 MΩ 1000 MΩ to 2000 MΩ</td>
</tr>
<tr>
<td>3490</td>
<td>3</td>
<td>250 V</td>
<td>500 V</td>
<td>1000 V</td>
<td>100 MΩ</td>
</tr>
</tbody>
</table>

### Accuracy (Insulation)

- ±5% of indicated value (1st effective measuring range)
- ±10% of indicated value (2nd effective measuring range)

### AC Voltage

0 to 600 V

### Specifications

- **Operating temperature**: 0°C to 40°C, 90% rh or less (non-condensating)
- **Storage temperature**: -10°C to 50°C, 90% rh or less (non-condensating)
- **Dustproof and waterproof**: IP40
- **Drop proof**: YES
- **Backlight**: YES
- **Safety standard category**: CAT III 600 V
- **Standards**: EN61010 (Safety), EN61326 (EMC)
- **Power supply**: LR6 alkaline battery x4 20 hours
- **Continuous operating time**: 20 hours
- **Dimensions (W × H × D)**:
  - IR4016, 17, 18: 162 × 182 × 57 mm (6.38 × 7.17 × 2.24 in)
  - 3490: 162 × 167 × 52 mm (6.38 × 6.57 × 2.05 in)
- **Mass**:
  - IR4016, 17, 18: 820 g (28.9 oz)
  - 3490: 840 g (29.6 oz)

### Accessories

- TEST LEAD L9787 (1.2 m)
- Neck strap
- LR6 alkaline battery x4
- Instruction manual

- **Order code**:
  - IR4016-20
  - IR4017-20
  - IR4018-20
  - 3490
**Options**

**IR401X, IR405X, 3490**

1. TEST LEAD SET WITH REMOTE SWITCH L9788-11
2. TEST LEAD WITH REMOTE SWITCH (RED) L9788-10
3. TIP PIN L9788-90
4. BREAKER PIN L9786-92
5. MAGNETIC ADAPTER 9804-01
6. MAGNETIC ADAPTER 9804-02
7. TEST LEAD L9787
8. CONNECTION CABLE SET L4930
9. ALLIGATOR CLIP SET L4935
10. TEST PIN SET L4938
11. BREAKER PIN L9787-91
12. WIRELESS ADAPTER Z3210

**IR3455**

1. TEST LEAD 9750 -01 RED, 3 m (9.84 ft)
2. TEST LEAD 9750 -02 BLACK, 3 m (9.84 ft)
3. TEST LEAD 9750 -03 BLUE, 3 m (9.84 ft)
4. TEST LEAD 9750 -11 RED, 10 m (32.81 ft)
5. TEST LEAD 9750 -12 BLACK, 10 m (32.81 ft)
6. TEST LEAD 9750 -13 BLUE, 10 m (32.81 ft)
7. ALLIGATOR CLIP 9751 -01 RED
8. ALLIGATOR CLIP 9751 -02 BLACK
9. ALLIGATOR CLIP 9751 -03 BLUE
10. TEMPERATURE SENSOR 9631-01 Molded plastic thermistor type (1 m (3.28 ft))
11. TEMPERATURE SENSOR 9631-05 Molded plastic thermistor type (5 cm (0.16 ft))
12. AC ADAPTER 9418-15
13. BATTERY PACK 9459

*When measuring in a CAT III environment, be sure to attach the sleeve to the test leads.*

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**Headquarters**

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https://www.hioki.com/

All information correct as of Nov. 13, 2020. All specifications are subject to change without notice.

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