Measure the Insulation Resistance of High-Voltage Equipment

Transformers, Cables, Motors and Other Equipment

Max. 10 TΩ Ideal for All Insulation Resistance Diagnostic Applications

Features

- 250 V to 5 kV Wide Range Test Voltage Settings
- Backlight White LED
- Operating Temperature Range -10 to 50°C
- CAT IV 600 V
The hard case is ideal for use at work sites. It is compact and easy to carry, and provides room for storing test leads. Use either AA batteries or the rechargeable battery pack, for reliable operation in environments where batteries are not available or when there is no time to recharge.

### Expanded operating temperature range
The temperature range in which the IR3455 can be used has been expanded to -10°C to 50°C (14°F to 122°F). This allows reliable use throughout the year, regardless of temperature.

### White backlight
A white backlight makes the IR3455 easy to operate even in low-light conditions. Visibility has improved compared to the legacy model, making it easier to confirm measurement values.

### Range of insulation resistance measurement expanded to a maximum of 10 TΩ. Functions such as automatic calculation and display of maximum PI (Polarization Index) and DAR (Dielectric Absorption Ratio), as well as step voltage test, temperature compensation, temperature measurement, and leakage current display make the IR3455 suitable for a variety of diagnostic applications.

### Safe and Easy-to-use Design

#### Shutter mechanism
A shutter mechanism prevents simultaneous access to measurement terminals with other terminals. Other safety features include a voltage measurement function, high-voltage warning indicator, and auto discharge function.

#### Bar-graph display
Use the logarithmic bar graph display for analog measurements. The insulation resistance is indicated by the number of dots that appear on-screen.

#### CAT IV 600 V
The IR3455 is designed to comply with safety regulations for category IV measurements (600 V), to reduce the risk of electric shock and other accidents from the input of high voltage.

### Features

#### Wide Range Test Voltage Settings
Generate test voltages ranging from 250 V to 5 kV. Settings can be made in steps as fine as 25 V. Perfect for measuring the insulation of high-voltage equipment such as transformers, cables, and motors.

#### 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.

#### Bundled software
Use the included application software to easily graph step voltage test data and create reports.

### USB interface
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.

### Battery pack support
Use either AA batteries or the rechargeable battery pack, for reliable operation in environments where batteries are not available or when there is no time to recharge.

### Hard case
The hard case is ideal for use at work sites. It is compact and easy to carry, and provides room for storing test leads.

### NEW

**Ideal for All Insulation Resistance Diagnostic Applications**

Range of insulation resistance measurement expanded to a maximum of 10 TΩ. Functions such as automatic calculation and display of maximum PI (Polarization Index) and DAR (Dielectric Absorption Ratio), as well as step voltage test, temperature compensation, temperature measurement, and leakage current display make the IR3455 suitable for a variety of diagnostic applications.
**Accuracy and Functionality**

### Insulation Diagnosis

- **Temperature compensation**: Result converted to insulation resistance at reference temperature. Ten (10) different temperature compensation tables can be selected, according to the insulation material of the object measured. Reference temperature: 20°C (68°F) or 40°C (104°F) by default. This setting can be changed.

- **PI/DAR display**: PI: Polarization Index, DAR: Dielectric Absorption Ratio. After insulation resistance measurement has started, calculation is performed using two resistance values obtained at prescribed time intervals. Formulas:
  - PI = resistance value 10 min after start/resistance value 1 min after start
  - DAR 1min/15s = resistance value 1 min after start/resistance value 15 sec after start
  - DAR 1min/30s = resistance value 1 min after start/resistance value 30 sec after start

### Supplementary Functions

- **Manual recording**: Store up to 100 data
- **Data memory**: Standard measurement/data/temperature compensation data/step voltage test data
- **Data logging**: Store measurement value at preset intervals, available for insulation resistance measurement only. Number of data: 10.
  - Number of logging instances: 360 times per data.
  - Recording interval: 15/30 s/1/2/5 m.
  - Number of data: 10.
- **Data logging**: Store up to 100 data
- **Data content**: Date, time, measurement interval, temperature, set voltage, actual output voltage × times, and resistance × times.
- **Additional functions**: Write mode, read mode, all clear, selective clear, and overwrite.

### Communication

- **Interface**: USB ver 2.0 (full speed)
- **PC application software**: Transfer of memory data from IR3455 to computer, data display, and create graph.
- **IR3455 items that can be set/changed from computer**: Transfer of memory data, interface: USB ver 2.0 (full speed), selective clear, and overwrite.

### Other

- **Temperature/humidity value input, timer, elapsed time display, clock, averaging, data hold, auto discharge, active voltage warning indication, hot conductor warning indication, LCD backlight, auto power-off, and buzzer.**
### General Specifications

**Accuracy**
- Guaranteed for 1 year. Post-adjustment accuracy guaranteed for 1 year.

**Measurement parameter**
- Insulation resistance, leakage current, voltage, and temperature.

**Operating temperature and humidity range**
- 10°C to 40°C (14°F to 104°F), less than 80% RH (no condensation).
- 20°C to 50°C (68°F to 122°F), at 50°C and below relative with linear decrease up to 50% RH.

**Battery pack**
- Battery pack 9549.7 V DC (rechargeable, Ni-MH).
- AC adapter 9545.

**Display**
- LCD with backlight.

**Power supply**
- **Max. power consumption**
  - 15 VA
  - 5VA (when using a battery pack or battery)

**Voltage measurement**
- **Test voltage**
  - 250 V to 5.00 kV DC
  - 250 V to 1.00 kV
  - 1.10 kV to 2.50 kV
  - 2.60 kV to 5.00 kV

**Resistance range**
- **Test voltage**
  - 250 V
  - 500 V
  - 1 kV
  - 2.5 kV
  - 5 kV

**Response time**
- 15 s max. (from measurement start until guaranteed accuracy display, no averaging)

**Leakage current measurement**
- **Test voltage**
  - 100 μA to 1 mA

**Temperature measurement**
- **Test voltage**
  - DC ±50 V to ±1.00 kV
  - AC 50 V to 750 V

**Input resistance**
- 10 MΩ or higher

**Temperature range accuracy**
- -10°C to 40°C (32°F to 104°F)
- 0°C to 104°C (32°F to 212°F)

**Product Specifications**

**Insulation resistance measurements**

<table>
<thead>
<tr>
<th>Test voltage</th>
<th>Measurement range</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>250 V</td>
<td>0.00 MΩ to 500 GΩ</td>
<td>±5% rdg.</td>
</tr>
<tr>
<td>500 V</td>
<td>0.00 MΩ to 1.00 TΩ</td>
<td>±5% rdg.</td>
</tr>
<tr>
<td>1.0 kV</td>
<td>0.00 MΩ to 2.00 TΩ</td>
<td>±5% rdg.</td>
</tr>
<tr>
<td>2.5 kV</td>
<td>0.00 MΩ to 5.00 TΩ</td>
<td>±5% rdg.</td>
</tr>
<tr>
<td>5 kV</td>
<td>0.00 MΩ to 10.0 TΩ</td>
<td>±5% rdg.</td>
</tr>
</tbody>
</table>

**Leakage current measurements**

<table>
<thead>
<tr>
<th>Current range</th>
<th>Measurement range</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 nA</td>
<td>0.00 nA to 999 nA</td>
<td>±5% rdg.</td>
</tr>
<tr>
<td>100 nA</td>
<td>0.90 nA to 99.9 nA</td>
<td>±5% rdg.</td>
</tr>
<tr>
<td>1 μA</td>
<td>0.90 μA to 99.9 μA</td>
<td>±5% rdg.</td>
</tr>
<tr>
<td>10 μA</td>
<td>0.90 μA to 999 μA</td>
<td>±5% rdg.</td>
</tr>
</tbody>
</table>

**Voltage measurement**

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>DC 50 Hz/60 Hz</td>
<td>±5% rdg.</td>
</tr>
</tbody>
</table>

**Input range**
- 10 MΩ or higher

**Response time**
- 15 s max. (from measurement start until guaranteed accuracy display, no averaging)

**Temperature measurement**

<table>
<thead>
<tr>
<th>Test voltage (setting value)</th>
<th>Measurement range</th>
<th>Accuracy</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 kV</td>
<td>2.2 kV to 5.00 kV</td>
<td>±5% rdg.</td>
</tr>
<tr>
<td>100 kV</td>
<td>28.0 kV to 100 kV</td>
<td>±5% rdg.</td>
</tr>
</tbody>
</table>

**Accessories**
- **USB cable**
  - 1 m (3.28 ft)
- **Instruction Manual**
  - 1

**HIOKI VOLTAGE INSULATION TESTER IR3455**

**Model No. (Order Code)**
- IR3455

**dll (AA) alkaline battery x 6**

**CD-R (Data Analysis Software)**
- 1

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