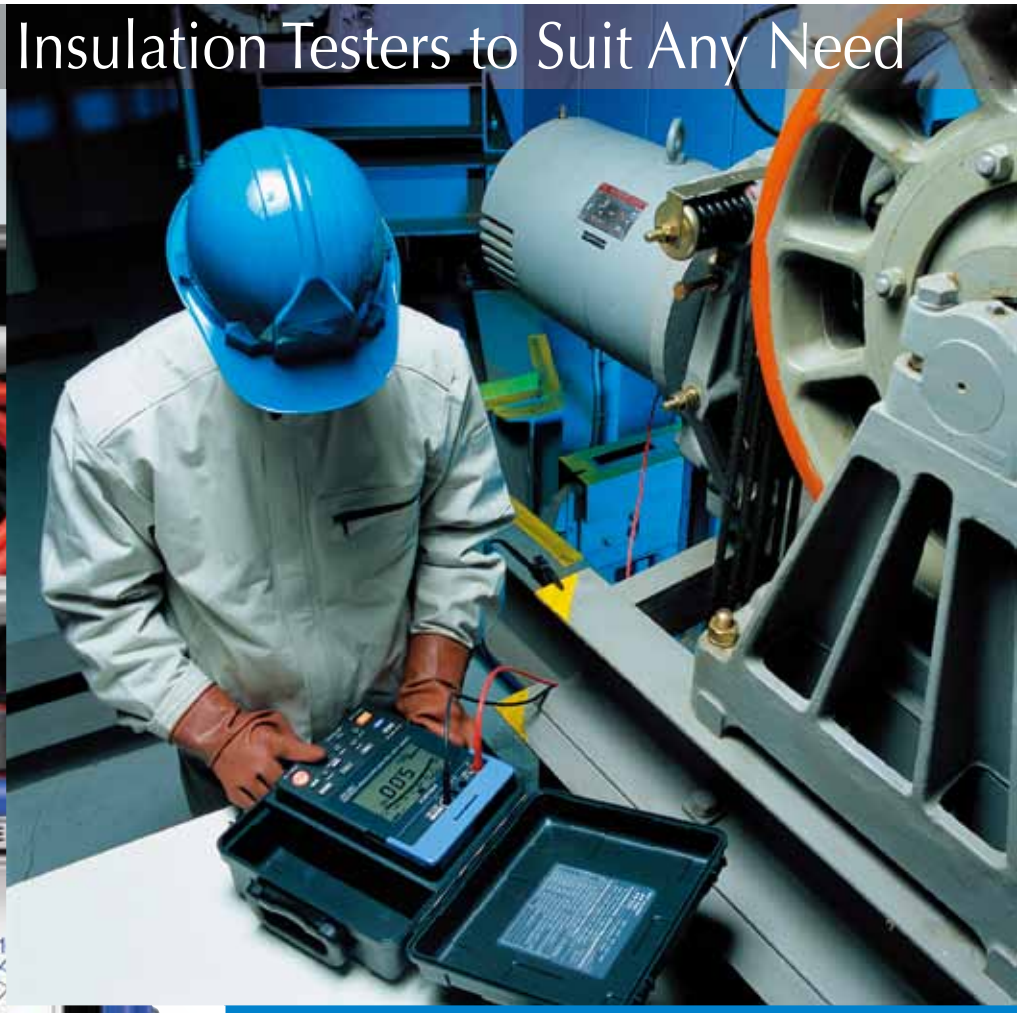
HIOKI

INSULATION TESTER SERIES

Field measuring instruments

A Full Line-up of Insulation Testers to Suit Any Need



From Basic Testing to
High Performance Analysis

ISO 9001
JMI-0216

ISO14001
JQA-E-90091

www.hioki.com
HIOKI company overview, new products, environmental considerations and other information are available on our website.

INSULATION TESTER SERIES

Selection guide

	IR4056-20	IR4057-20	IR4016-20 to IR4018-20			3490	3455
							
Basic Specifications							
Display	Digital	Digital (Bar graph)	Analog Meter			Analog Meter	Digital (Bar graph)
			IR4016-20	IR4017-20	IR4018-20		
Display backlight function	●	●	●	●	●	●	●
Testing voltage 50V DC	●	●	—	—	—	—	—
Testing voltage 125V DC	●	●	—	—	—	—	—
Testing voltage 250V DC	●	●	—	—	—	●	●
Testing voltage 500V DC	●	●	●	●	—	●	●
Testing voltage 1000V DC	●	●	—	—	●	●	●
Testing voltage 2500V DC	—	—	—	—	—	—	●
Testing voltage 5000V DC	—	—	—	—	—	—	●
Effective maximum indicated value	100MΩ (50V) 250MΩ (125V) 500MΩ (250V) 2000MΩ (500V) 4000MΩ (1000V)	100MΩ (50V) 250MΩ (125V) 500MΩ (250V) 2000MΩ (500V) 4000MΩ (1000V)	100MΩ (500V DC)	1000MΩ (500V DC)	2000MΩ (1000V DC)	100MΩ (250,500V DC) 4000MΩ (1000V DC)	250GΩ (250V) 500GΩ (500V) 1.00TΩ (1kV) 2.50TΩ (2.50kV) 5.00TΩ (5.00kV)
Low resistance	●	●	—	—	—	●	—
AC Voltage	●	●	●	●	●	●	●
Function							
Comparator	●	●	—	—	—	—	—
Memory	—	—	—	—	—	—	●

INSULATION TESTER

IR4056-20

Our most popular model offering reading stability in medium-speed digital format

- 5-range testing voltage 50 V/100 MΩ to 1000 V/4000 MΩ
- Drop proof onto concrete from 1m (3.28 feet)
- Continuity check via 200 mA testing
- Complies with EN61557

CE
CAT Ⅲ 600 V

IR4056-20 SPECIFICATIONS

Insulation resistance	Testing voltage	50V	125V	250V	500V	1000V
	Effective maximum indicated value	100 MΩ	250 MΩ	500 MΩ	2000 MΩ	4000 MΩ
	First effective measurement range [MΩ]	±4 % rdg.				
		at 0.200 to 10.00	at 0.200 to 25.00	at 0.200 to 50.0	at 0.200 to 500	at 0.200 to 1000
	Second effective measurement range [MΩ]	±8% rdg.				
		at 10.1 to 100.0	at 25.1to 250	at 50.1 to 500	at 501 to 2000	at 1010 to 4000
	Other measurment range [MΩ]	±2 %rdg. ±6dgt. at 0 to 0.199				
	Lower limit resistance value to maintain nominal output voltage	0.05 MΩ	0.125 MΩ	0.25 MΩ	0.5 MΩ	1 MΩ
	Overload protection	600 VAC (10 s)				1200 VAC (10 s)

COMMON SPECIFICATIONS

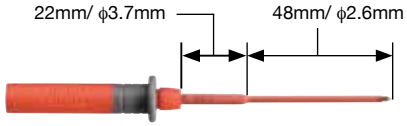
resistance	Measurement range: 10.00 Ω / 100.0 Ω / 1000 Ω Measuring current: 200 mA or more (at 6 Ω or less) Accuracy (after zero adjustment) : ±3%rdg. ±2dgt. (0 to 0.19 Ω: ±3dgt. 0.20 to 10.00 Ω: ±3%rdg. ±2dgt.) Overload protection: 600 VAC (10s, using Fuse)
AC voltage	Display indication range: 0 to 750 V Accuracy: ±2.3 %rdg. ±8 dgt.(up to 600V), Frequency range: 50 / 60 Hz
DC voltage	Display indication range: 0 to 750 V Accuracy: ±1.3 %rdg. ±4 dgt.(up to 600V)
Accessories	Test Lead L9787 × 1, Neck strap × 1, Instruction manual × 1, LR6 alkaline battery × 4

- **Other functions**: Live circuit indicator, Automatic electric discharge, Automatic DC/AC detection, Comparator, Built-in battery power indicator etc.
- **Power source**: LR6 alkaline battery × 4
- **Dimensions and Mass**: Approx. 159W×177H×53D mm(6.26"W×6.97"H×2.09"D) (excluding protrusions)
  Approx. 600g (21.2 oz) (including battery, excluding test lead)

OPTIONS

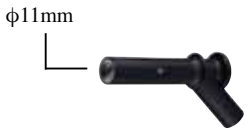
BREAKER PIN (for Models L9787) L9787-91
MAGNETIC ADAPTER (for Models L9788, L9787) 9804-02
Test Lead Set with Remote Switch L9788-11
Test Lead with Remote Switch(Red) L9788-10
Breaker Pin L9788-92
Tip Pin L9788-90
● Refer to P.6 ➔

BREAKER PIN
L9787-91 (for Model L9787)



Extra long tips extend deep into the breaker openings for more reliable testing

MAGNETIC ADAPTER (L9787 / L9788 Option)
9804-02



Magnetic tip for use with the standard Models L9788-11, L9788-10, L9787 (generally compatible with M6 pan screws)

Accessories

TEST LEAD
L9787 (1.2m)

Conforms to safety standard IEC61010-031 (revised) for hand-held probes

included as a standard accessory
(This sleeve cannot be attached to previous products)

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

Instant judgment

Since the IR4056-20 and IR4057-20 generate judgments as soon as the test lead makes contact, it is possible to make a rapid series of measurements in the manner of a continuity check.

*In some cases, the capacitance component may prevent a judgment from being made until charging completes.

Identify PASS/FAIL using light and sound

The IR4056-20 and IR4057-20 notify the operator of pass and fail judgments using a beeping sound, LCD light, and comparator indicator on the test lead with remote control switch (optional accessory), allowing determinations of compliance to be made without looking at the instrument.

PASS
When the measured value is greater than or equal to the reference value*
Short beep

No change

Green

FAIL
When the measured value is less than the reference value*
Continuous tone

*Insulation resistance measurement

Red

Red

Integrated hard case with sliding cover


With cover closed

Compact storage without disconnecting test probes

Backlight (White LED)

A backlight makes it possible to work in dark or poorly lit locations.

INSULATION TESTER SERIES

INSULATION TESTER

IR4057-20

CE
CAT III 600 V

Quick response comparator offering reading stability in high-speed digital format

- 5-range testing voltage 50 V/100 MΩ to 1000 V/4000 MΩ
- Stable & high-speed digital readings, response time at PASS/ FAIL decision 0.3 second
- Drop proof onto concrete from 1m (3.28 feet)
- Bright LED luminous LCD, Test lead with bright LED lamp to illuminate near hand (Option L9788-11 or L9788-10)
- Continuity check via 200 mA testing
- Built in AC/DC voltage meter, useful for testing solar power generation systems and electric vehicles
- Complies with EN61557

Insulation resistance	Testing voltage	50V	125V	250V	500V	1000V
	Effective maximum indicated value	100 MΩ	250 MΩ	500 MΩ	2000 MΩ	4000 MΩ
	First effective measurement range [MΩ]	±4 % rdg.				
		at 0.200 to 10.00	at 0.200 to 25.00	at 0.200 to 50.0	at 0.200 to 500	at 0.200 to 1000
	Second effective measurement range [MΩ]	±8% rdg.				
		at 10.1 to 100.0	at 25.1to 250	at 50.1 to 500	at 501 to 2000	at 1010 to 4000
	Other measurment range [MΩ]	±2 %rdg. ±6dgt. at 0 to 0.199				
	Lower limit resistance value to maintain nominal output voltage	0.05 MΩ	0.125 MΩ	0.25 MΩ	0.5 MΩ	1 MΩ
	Overload protection	600 VAC (10 s)				1200 VAC (10 s)

COMMON SPECIFICATIONS

resistance	Measurement range: 10.00 Ω / 100.0 Ω / 1000 Ω Measuring current: 200 mA or more (at 6 Ω or less) Accuracy (after zero adjustment) : ±3%rdg. ±2dgt. (0 to 0.19 Ω: ±3dgt. 0.20 to 10.00 Ω: ±3%rdg. ±2dgt.) Overload protection: 600 VAC (10s, using Fuse)
AC voltage	Display indication range: 0 to 750 V Accuracy: ±2.3 %rdg. ±8 dgt.(up to 600V), Frequency range: 50 / 60 Hz
DC voltage	Display indication range: 0 to 750 V Accuracy: ±1.3 %rdg. ±4 dgt.(up to 600V)
Accessories	Test Lead L9787 × 1, Neck strap × 1, Instruction manual × 1, LR6 alkaline battery × 4

- **Other functions**: Live circuit indicator, Automatic electric discharge, Automatic DC/AC detection, Comparator, Built-in battery power indicator etc.
- **Power source**: LR6 alkaline battery × 4
- **Dimensions and Mass**: Approx. 159W×177H×53D mm(6.26"W×6.97"H×2.09"D) (excluding protrusions)
  Approx. 640g (22.6 oz) (including battery, excluding test lead)

OPTIONS

BREAKER PIN (for Models L9787) L9787-91
MAGNETIC ADAPTER (for Models L9788, L9787) 9804-02
Test Lead Set with Remote Switch L9788-11
Test Lead with Remote Switch(Red) L9788-10
Breaker Pin L9788-92
Tip Pin L9788-90

● Refer to P.6 ➔

Double Action for Safety

■ IR4056-20/IR4057-20 500 V/1000 V range only

1

Set the function key to either 500 V or 1000 V.

2

Press the flashing “RELEASE” key.

ANALOG MΩ HiTESTER

IR4016-20 to IR4018-20

Reliable and Effecient Inslation Testing in the field

- Single range insulation resistance meters
- Luminous scale lets you see better in the dark
- Drop proof (1m)
- Complies with EN61557

CE
CAT Ⅲ 600 V
DROP PROOF

Common SPECIFICATIONS

Discharge function : effective
Power source : Rated power voltage: 1.5 VDC× 4,
AA alkaline (LR6) battery × 4
Dimensions, mass : Approx. 159W × 177H × 53D mm, 610 g
(6.26"W × 6.97"H × 2.09"D, 21.5 oz.)
including battery, not including test lead
Accessories : TEST LEAD L9787(1), Shoulder strap(1)
Safety : EN61010, EMC EN61326, EN61557-1/-2

OPTIONS

● Refer to P.3 ➔
BREAKER PIN (for Models L9787) L9787-91
MAGNETIC ADAPTER (for Models L9788, L9787) 9804-02
● Refer to P.6 ➔
Test Lead Set with Remote Switch L9788-11
Test Lead with Remote Switch(Red) L9788-10
Breaker Pin L9788-92
Tip Pin L9788-90

SPECIFICATIONS

Model	IR4016-20	IR4017-20	IR4018-20
Testing voltage	500 V DC	500 V DC	1000 V DC
Effective maximum indicated value	100 MΩ	1000 MΩ	2000 MΩ
First effective measurement range and tolerances	±5 % of scale indication at 0.1 to 50 MΩ	±5 % of scale indication at 1 to 500 MΩ	±5 % of scale indication at 2 to 1000 MΩ
Second effective measurement range and tolerances	±10 % of scale indication at 0.01 to 0.1 MΩ, 50 to 100 MΩ	±10 % of scale indication at 0.5 to 1 MΩ, 500 to 1000 MΩ	±10 % of scale indication at 1 to 2 MΩ, 1000 to 2000 MΩ
Lower limit measurement resistance value to be maintained reted output voltage	0.5 MΩ	0.5 MΩ	1 MΩ
Open circuit voltage	1 to 1.2 times of rated output voltage		
Rated current	1mA (Tolerance: 1 to 1.2 times of the rating value)		
AC voltage range	0 to 600 V (50/60 Hz), ±5% of maximum scale value accuracy		
Input resistance	500 kΩor more (50/60Hz)		

Advanced Features (IR4016-20 to IR4018-20 and 3490)

Flip the Cover

Quick and easy storage without disconnecting the leads

Luminous Scale

See better in the dark

Check for Live Circuits

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

Bright LED

- Work safely knowing that when the RED is lit, live wires, high voltage or electrical discharge is present
- The super bright light at the tip of the optional 9788 Test Leads adds to efficiency

INSULATION TESTER SERIES

ANALOG MΩ HiTESTER

3490

Insulation Testing in 3 Easy Steps
Flip the Cover, Select Range & Test

- 3-range testing voltage, Insulation meter
- Luminous scale
- Check for live circuits
- Check for the battery status
- Complies with EN 61557

CE
CAT Ⅲ 600 V
DROP PROOF

SPECIFICATIONS

Testing voltage	250 V DC	500 V DC	1000 V DC
Rated resistance	100 MΩ	100 MΩ	4000 MΩ
Accuracy 1st effective measuring range	±5 % of indicated value 0.05 to 50 MΩ	±5 % of indicated value 0.05 to 50 MΩ	±5 % of indicated value 2 to 1000 MΩ
Rated measurement current	1 mA		
Low resistance	3 Ω range, ±0.09 Ω accuracy, 200 mA DC measuring current, 4.1 to 6.9 V open-circuit voltage		30 Ω range, ±0.9 Ω accuracy, 20 mA DC measuring current, 4.1 to 6.9 V open-circuit voltage
AC voltage range	0 to 600 V (50/60 Hz), ±5 % of maximum scale value accuracy		
Other functions	Luminous scale, Battery status check, Live circuit check		
Power consumption	AA alkaline (LR6) battery × 4, Continuous use: 20 hours (at 500 V range, no load)		
Dimensions, mass	159 mm (6.26 in) W × 177 mm (6.97 in) H × 53 mm (2.09 in) D, 610g (21.5 oz.)		
Accessories	TEST LEAD L9787 × 1, Operation manual × 1, Shoulder strap × 1, AA alkaline battery (LR6) × 4		

OPTIONS

BREAKER PIN (for Models L9787) L9787-91
MAGNETIC ADAPTER (for Models L9788, L9787) 9804-02
● Refer to P.3 ➔

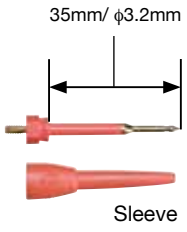
Test Lead Set with Remote Switch L9788-11
Test Lead with Remote Switch(Red) L9788-10
● Refer to P.6 ➔

Breaker Pin L9788-92
Tip Pin L9788-90

COMPLETE TEST LEAD WITH REMOTE CONTROL SWITCH
L9788-11 (1.2m)

TEST LEAD WITH REMOTE CONTROL SWITCH
L9788-10 (1.2m)

TIP PIN
L9788-90
(for Model L9788-10)



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

TEST LEAD WITH REMOTE CONTROL SWITCH

REMOTE CONTROL SWITCH
- Start and stop the test at the touch of a button
- Test for insulation resistance single-handedly

LED LIGHT
- Illuminate the test location with a bright white LED

HIGH VOLTAGE INSULATION HiTESTER 3455

Maximum 5kV Test Voltage - Up to 5TΩ of Insulated Resistance Testing
Safely evaluate the insulation characteristics of high voltage transformers, motors and cables

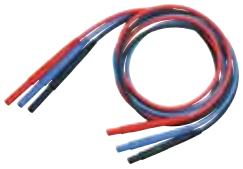
- Wide voltage range (250V to 5kV) for maximum 5TΩ of insulation resistance measurements
- Automatically calculate and display the PI (Polarization Index) and DAR (Dielectric Absorption Ratio) for all types of insulation evaluations
- Temperature compensation to accurately respond to variations in insulation material
- Internal memory stores 100 blocks of manually recorded data and 10 sets of log data
- USB interface, compact rugged case, and safe design

CE

SPECIFICATIONS

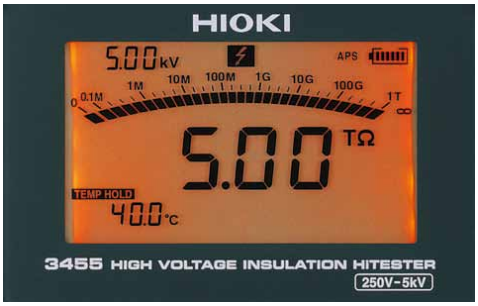
250 V range	0.00 MΩ to 250 GΩ, Accuracy :±5 % rdg. ±5 dgt. (0 to 2.50 GΩ) ±20 % rdg. ±5 dgt. (2.50 to 250 GΩ)
500 V range	0.00 MΩ to 500 GΩ , Accuracy :±5 % rdg. ±5 dgt. (0 to 5.00 GΩ) ±20 % rdg. ±5 dgt. (5.00 to 500 GΩ)
1 kV range	0.00 MΩ to 1.00 TΩ , Accuracy :±5 % rdg. ±5 dgt. (0 to 10.0 GΩ) ±20 % rdg. ±5 dgt. (10.0 to 500 GΩ) ±30 % rdg. ±50 dgt. (500 G to 1.00 TΩ)
2.5 kV range	0.00 MΩ to 2.50 TΩ, Accuracy :±5 % rdg. ±5 dgt. (0 to 25.0 GΩ) ±20 % rdg. ±5 dgt. (25.0 to 500 GΩ) ±30 % rdg. ±50 dgt. (500 G to 2.50 TΩ)
5 kV range	0.00 MΩ to 5.00 TΩ , Accuracy :±5 % rdg. ±5 dgt. (0 to 50.0 GΩ) ±20 % rdg. ±5 dgt. (50.0 to 500 GΩ) ±30 % rdg. ±50 dgt. (500 G to 5.00 TΩ)
Functions	Insulation resistance mode: Data memory(100 data), measurement value hold, average, bar graph display, timer etc. Leak current: (1.00nA to 1.20mA), Temperature: (-10°C to 70°C) Voltage: (DC±50V to 1kV AC 50V to 750V) All measurement mode: live wire warning, battery indicators, auto power save
Interface	USB ver 2.0 (full speed)
Display	LCD with backlight
Power supply	LR6(AA) alkaline batteries × 6, BATTERY PACK 9459, AC ADAPTER 9753
Dimensions, mass	Approx.260 W × 251 H × 120 D mm (10.2"W × 9.9"H × 4.7"D) Approx.2.8 kg (98.8 oz.)
Accessories	TEST LEAD (red, 3m) 9750-01(1) TEST LEAD (black, 3m) 9750-02(1) TEST LEAD (blue 3m) 9750-03(1) ALLIGATOR CLIP (red) 9751-01(1) ALLIGATOR CLIP (black) 9751-02(1) ALLIGATOR CLIP (blue) 9751-03(1) LR6(AA) Alkaline batteries (6), USB CABLE(1)

TEST LEAD (red, black, blue 3m) 9750-01 to 03



ALLIGATOR CLIP (red, black, blue) 9751-01 to 03

Large, Easy to Read Display



The display is backlit and features a logarithmic bar graph similar to an analog type indicator in addition to the digital readout.

USB Interface

Easily transfer data to a PC via the USB interface using our free PC application software. The software also features a convenient report creation function.

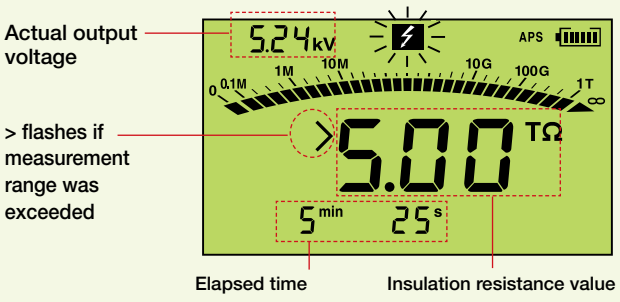
HIGH VOLTAGE INSULATION TESTER

Primary Measurement Functions

Insulation resistance measurement

Measurement voltage is selectable from 250 V, 500 V, 1.00 kV, 2.50 kV, and 5.00 kV. More finely graded settings are also possible. When measurement is completed, the unit shows the insulation resistance value, test voltage (setting and actual output), leakage current, DAR, PI, and elapsed time.

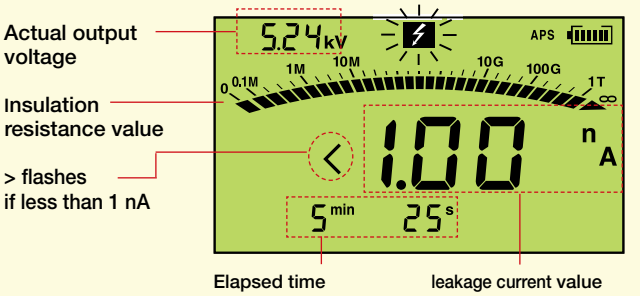
Insulation resistance measurement display



Leakage current display

When measuring insulation resistance, the instrument can be switched to display leakage current. This is possible before, during, and after measurement.

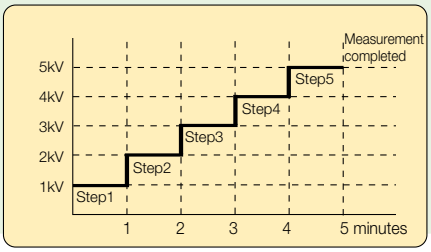
Display of leakage current during measurement



Step voltage test

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. The test time for each step can also be selected.

STEP 5.0 kV step voltage test



OPTIONS

TEMPERATURE SENSOR (1m)	9631-01
TEMPERATURE SENSOR (6cm)	9631-05
TEST LEAD (red, 10m)	9750-11
TEST LEAD (black, 10m)	9750-12
TEST LEAD (blue, 10m)	9750-13
BATTERY PACK	9459
AC ADAPTER	9753

TEMPERATURE SENSOR 9631-01
Molded plastic, thermistor type

TEMPERATURE SENSOR 9631-05
Molded plastic, thermistor type

BATTERY PACK 9459

AC ADAPTER 9753

HIOKI
HIOKI E. E. CORPORATION

HEADQUARTERS:
81 Koizumi, Ueda, Nagano, 386-1192, Japan
TEL +81-268-28-0562 FAX +81-268-28-0568
http://www.hioki.com / E-mail: os-com@hioki.co.jp

HIOKI USA CORPORATION:
TEL +1-609-409-9109 FAX +1-609-409-9108
http://www.hiokiusa.com / E-mail: hioki@hiokiusa.com

HIOKI (Shanghai) SALES & TRADING CO., LTD.:
TEL +86-21-63910090 FAX +86-21-63910360
http://www.hioki.cn / E-mail: info@hioki.com.cn

HIOKI INDIA PRIVATE LIMITED:
TEL +91-124-6590210 FAX +91-124-6460113
E-mail: hioki@hioki.in

HIOKI SINGAPORE PTE. LTD.:
TEL +65-6634-7677 FAX +65-6634-7477
E-mail: info@hioki.com.sg

HIOKI KOREA CO., LTD.:
TEL +82-42-936-1281 FAX +82-42-936-1284
E-mail: info-kr@hioki.co.jp

DISTRIBUTED BY

All information correct as of Jun. 18, 2013. All specifications are subject to change without notice.
MohmsE4-36M Printed in Japan