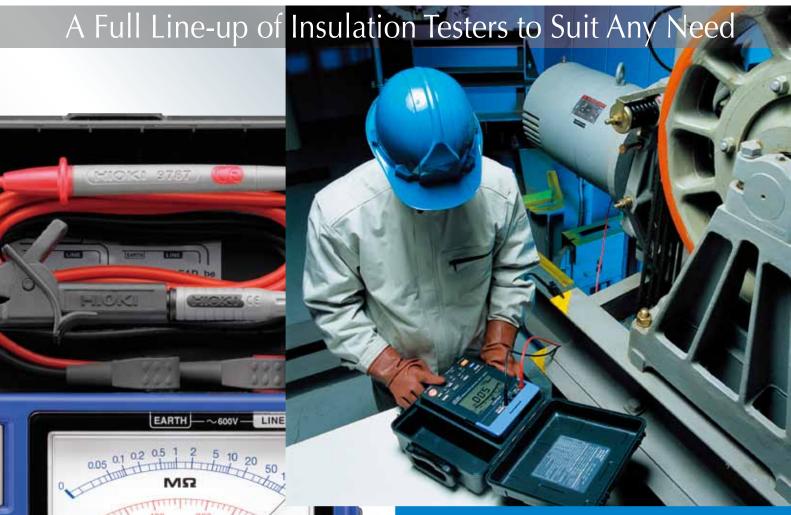
# ΗΙΟΚΙ

# **INSULATION TESTER SERIES**

Field measuring instruments







From Basic Testing to High Performance Analysis

#### **Selection guide**

		IR4056-20	IR4057-20	IR4016	-20 to IR	4018-20	3490	3455
Basic Spe	cifications			- 1				
Dis	play	Digital	Digital (Bar graph)		nalog Met IR4017-20	er IR4018-20	Analog Meter	Digital (Bar graph)
Display back	light function	•	•	•	•	•	•	•
	50V DC	•	•	_	—	_	—	_
	125V DC	•	•	-	—	—	—	—
Testing	250V DC	•	•	-	—	—	•	•
voltage	500V DC	•	•		•	—	•	•
voltage	1000V DC	•	•	-	—	•	•	•
	2500V DC	—	—	-	—	—	-	•
	5000V DC	—	—	-	—	—	-	•
	maximum ed value	100MΩ (50V) 250MΩ (125V) 500MΩ (250V) 2000MΩ (500V) 4000MΩ (1000V)	100MΩ (50V) 250MΩ (125V) 500MΩ (250V) 2000MΩ (500V) 4000MΩ (1000V)	100ΜΩ (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 res	sistance	•	•	-	-	-	•	-
AC Vo	oltage	•	•		•	•	•	•
Function								
Comp	arator	•	•	_	_	_	_	_
Mer	nory	_	_	_	—		_	

# **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

#### **IR4056-20SPECIFICATIONS**







	Testing voltage	50V	125V	250V	500V	1000V	
	Effective maximum indicated value	100 MΩ	250 MΩ	500 MΩ	2000 MΩ	4000 MΩ	
	First			±4 % rdg.			
	effective measurement range $[M\Omega]$	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			±8% rdg.			
Insulation resistance		at 10.1 to 100.0	at 25.1to 250	at 50.1 to 500	at 501 to 2000	at 1010 to 4000	
		±2 %rdg. ±6dgt.					
	Other measurment range $[M\Omega]$			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 VA	C (10 s)		1200 VAC (10 s)	

#### COMMON SPECIFICATIONS

resistance	Measurement range: $10.00 \Omega / 100.0 \Omega / 1000 \Omega$ Measuring current: 200 mA or more (at 6 $\Omega$ or less) Accuracy (after zero adjustment): $\pm 3\%$ rdg. $\pm 2$ dgt. (0 to 0.19 $\Omega$ : $\pm 3$ dgt. 0.20 to 10.00 $\Omega$ : $\pm 3\%$ rdg. $\pm 2$ dgt.)
	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

•Functions: Live circuit indicator, Automatic electric discharge, Automatic DC/AC detection, Comparator, Built-in battery power indicator etc. •Power supply: 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

**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

φ11mm



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

#### 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.

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  $\rightarrow$ 



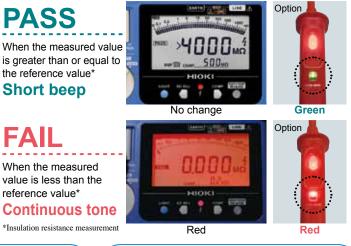
# **Detachable!**

#### 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.

#### 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.





#### **Backlight (White LED)**



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

# IR4057-20

Syears Guaranteed for 3 years CAT III 600 W

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

- •5-range testing voltage 50 V/100 M $\Omega$  to 1000 V/4000 M $\Omega$
- 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



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

#### **COMMON SPECIFICATIONS**

	Measurement range: $10.00 \Omega / 100.0 \Omega / 1000 \Omega$ Measuring current: 200 mA or more (at 6 $\Omega$ or less )
resistance	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

•Functions: Live circuit indicator, Automatic electric discharge, Automatic DC/AC detection, Comparator, Built-in battery power indicator etc. •Power supply: 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 →

# <section-header>Double Action for SafetyImage: Image: I

# 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

#### Common SPECIFICATIONS

Discharge function : effective Power supply : Rated power voltage: 1.5 VDC × 4, AA alkaline (LR6) battery × 4 Dimensions and 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  $\rightarrow$ 

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 ΜΩ
First	±5 % of scale indication	±5 % of scale indication	±5 % of scale indication
effective measurement range and tolerances	at 0.1 to 50 $M\Omega$	at 1 to 500 MΩ	at 2 to 1000 MΩ
Second	±10 % of scale indication	±10 % of scale indication	±10 % of scale indication
effective measurement range and tolerances	at 0.01 to 0.1 M\Omega, 50 to 100 M\Omega	at 0.5 to 1 MΩ, 500 to 1000 MΩ	at 1 to 2 M\Omega, 1000 to 2000 M\Omega
Lower limit measurement resistance value	0.5 ΜΩ 0.5 ΜΩ		1 MΩ
to be maintained reted output voltage	0.5 MIS2	0.5 MIS2	1 10152
Open circuit voltage		1 to 1.2 times of rated output voltage	2
Rated current	1mA (*	Folerance: 1 to 1.2 times of the rating	g value)
AC voltage range	0 to 600 V (5	50/60 Hz), ±5% of maximum scale v	alue accuracy
Input resistance		500 kΩor more (50/60Hz)	

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





Quick and easy storage without disconnecting the leads

#### Lumfnous Seale



See better in the dark

#### Bitchtue

- 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

#### Checkfor 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.



# ANALOG M $\Omega$ 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



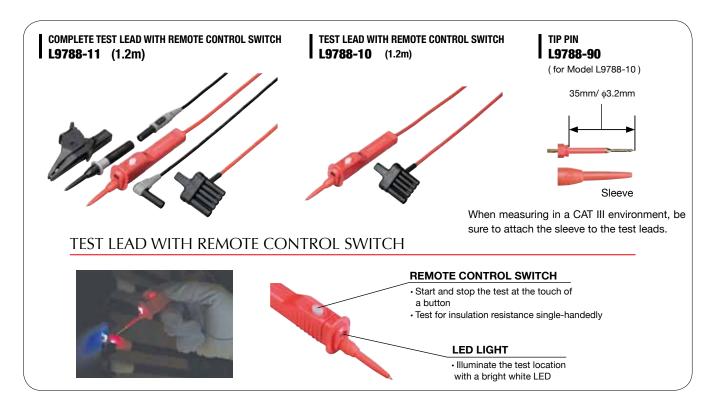


SPECIFICATIONS					
Testing voltage	250 V DC	500 V DC		1000 V DC	
Rated resistance	100 MΩ	100 MΩ		4000 ΜΩ	
Accuracy	±5 % of indicated value	±5 % of indicated v	alue	±5 % of indicated value	
1st effective measuring range	$0.05$ to $50$ M $\Omega$	0.05 to 50 MΩ		2 to 1000 MΩ	
Rated measurement current		1 mA			
	3 Ω range, ±0.09 9	Ω accuracy,	30	$\Omega$ range, $\pm 0.9 \Omega$ accuracy,	
Low resistance	200 mA DC measuring current,		20 mA DC measuring current,		
	4.1 to 6.9 V open-ci	ircuit voltage	4.1	to 6.9 V open-circuit voltage	
AC voltage range	0 to 600 V (5	50/60 Hz), ±5 % of maxin	num scale value accuracy		
Functions	Luminou	s scale, Battery status che	ck, Live ci	ircuit check	
Power supply	AA alkaline (LR6) bat	tery × 4, Continuous use:	20 hours (	(at 500 V range, no load)	
Dimensions and mass	159 mm (6.26 in) W >	× 177 mm (6.97 in) H × 5	3 mm (2.0	9 in) D, 610g (21.5 oz.)	
Accessories	TEST LEAD L9787 × 1, Oper	ation manual × 1, Should	er strap ×	1, AA alkaline battery (LR6) ×	

#### 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



## **HIGH VOLTAGE INSULATION TESTER**

### HIGH VOLTAGE INSULATION HITESTER 3455

Maximum 5kV Test Voltage - Up to  $5T\Omega$  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



SPECIFICATION	NS					
250 V range	$0.00 \text{ M}\Omega$ to 250 G $\Omega$ ,					
0	Accuracy :±5 % rdg. ±5 dgt. (0 to 2.50 GΩ)					
	$\pm 20$ % rdg. $\pm 5$ dgt. (2.50 to 250 G $\Omega$ )					
500 V range	$0.00 \text{ M}\Omega$ to $500 \text{ G}\Omega$ ,					
	Accuracy :±5 % rdg. ±5 dgt. (0 to 5.00 GΩ)					
	$\pm 20 \%$ rdg. $\pm 5$ dgt. (5.00 to 500 G $\Omega$ )					
1 kV range	$0.00 \ \mathrm{M}\Omega$ to $1.00 \ \mathrm{T}\Omega$ ,					
	Accuracy : $\pm 5 \%$ rdg. $\pm 5$ dgt. (0 to 10.0 G $\Omega$ )					
	$\pm 20 \%$ rdg. $\pm 5$ dgt. (10.0 to 500 G $\Omega$ )					
	±30 % rdg. ±50 dgt. (500 G to 1.00 TΩ)					
2.5 kV range	$0.00 \text{ M}\Omega$ to $2.50 \text{ T}\Omega$ ,					
	Accuracy : $\pm 5 \%$ rdg. $\pm 5$ dgt. (0 to 25.0 G $\Omega$ )					
	$\pm 20\%$ rdg. $\pm 5$ dgt. (25.0 to 500 GΩ)					
	$\pm 30 \%$ rdg. $\pm 50$ dgt. (500 G to 2.50 T $\Omega$ )					
5 kV range	$0.00 \text{ M}\Omega$ to $5.00 \text{ T}\Omega$ ,					
	Accuracy : $\pm 5 \%$ rdg. $\pm 5$ dgt. (0 to 50.0 G $\Omega$ )					
	$\pm 20 \%$ rdg. $\pm 5$ dgt. (50.0 to 500 G $\Omega$ )					
	±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 $\pm$ 50V to 1kV AC 50V to 750V)					
	All measurement mode: live wire warning, battery indicators, auto power save					
Interfaces	USB ver 2.0 (full speed)					
Display	LCD with backlight					
Power supply	LR6(AA) alkaline batteries × 6, BATTERY PACK 9459, AC ADAPTER 9753					
Dimensions and	Approx.260 W $\times$ 251 H $\times$ 120 D mm (10.2"W $\times$ 9.9"H $\times$ 4.7"D)					
mass	Approx.2.0 w × 2.51 11× 120 D mm (10.2 w × 9.9 11 × 4.7 D) Approx.2.8 kg (98.8 oz.)					
Accessories	TEST LEAD (red, 3m) 9750-01 x1					
recessories	TEST LEAD (black, $3m$ ) 9750-02 ×1					
	TEST LEAD (blue 3m) $9750-03 \times 1$					
	ALLIGATOR CLIP (red) 9751-01 ×1					
	ALLIGATOR CLIP (black) 9751-02 ×1					
	ALLIGATOR CLIP (blue) 9751-03 ×1					

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

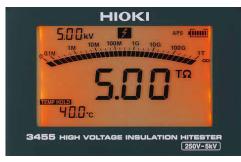
LR6(AA) Alkaline batteries ×6, USB CABLE ×1





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**

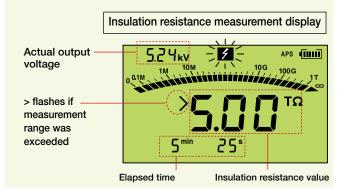
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Easily transfer data to a PC via the USB interface using our free PC application software. The software also features a convenient report creation function.

#### 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.



#### Step voltage test

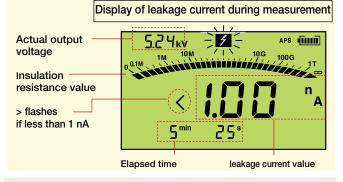
In this type of test, the voltage is gradually raised and the insulation resistance and leakage current change is measured. Two different step settings are available: 500 V  $\rightarrow$  1 kV  $\rightarrow$  1.5 kV  $\rightarrow$  2 kV  $\rightarrow$  2.5 kV and 1 kV  $\rightarrow$  2 kV  $\rightarrow$  3  $kV \rightarrow 4 kV \rightarrow 5 kV$ . The test time for each step can also be selected.

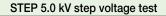
9631-01

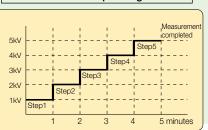
9631-05

#### Leakage current display

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







#### **OPTIONS**

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

BATTERY PACK 9459



**TEMPERATURE SENSOR 9631-01** Molded plastic, thermistor type



**TEMPERATURE SENSOR 9631-05** Molded plastic, thermistor type



AC ADAPTER 9753



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All information correct as of Oct. 1, 2013. All specifications are subject to change without notice.