

# HIOKI

MAINTENANCE TESTER

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3112 DIGITAL MΩ Hi TESTER  
3114 DIGITAL MΩ Hi TESTER

## Two Digital Insulation Resistance Meters Designed for On-site Work Applications

- 3112: 250V/200MΩ, with AC voltage measurement function
- 3114: 500V/200MΩ and 1000V/200MΩ ranges, with AC voltage and ohms measurement function



# Two models available to meet your particular needs: the single-range (250V/200M $\Omega$ )

One of the prime concerns of any organization involved in providing power to the public, or in operating electrical equipment is safety. And safety requires the capability to measure insulation resistance.

The 3112 and 3114 Digital Insulation Resistance Meters offer that capability. Developed based on the technology acquired in the production of the battery operated 3110 Insulation Resistance Meter (an analog meter, the first to receive certification under JIS Standards).

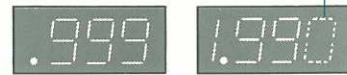
these hand-held meters employ the latest digital technology, and are designed to function ideally in on-site work applications.

## Resolution of 0.001M $\Omega$

Measurement resolution of 0.001M $\Omega$  is obtained when the MSD "1" is blanked; with the reading shown by the three lower digits.

Note however, that when the MSD "1" appears, the digit in the lowest column will be blanked; making the display easy to read when resistance values are changing.

Blanked



## 3112 DIGITAL M $\Omega$ HI TESTER

250V/200M $\Omega$ , with AC V measurement function

## 3114 DIGITAL M $\Omega$ HI TESTER

500V/200M $\Omega$  and 1000V/200M $\Omega$  ranges, with AC V and  $\Omega$  measurement function

### Lockable Power Switch

For typical measurements (M $\Omega$ , AC V and  $\Omega$ ), the power switch is normally just pressed and held. But, for continuous measurement applications, the switch may be locked in the ON position by simply pressing and sliding up. Note also that power to the instrument is disabled when the probe lead is disconnected.

(Ohm function is not provided for 3112)

### Function Status Reported by Lamps

Switching the M $\Omega$ , AC V and  $\Omega$  function lights the appropriate LED in the display, clearly indicating the measurement function and minimizing any chance of error.

(Ohm function is not provided for 3112)



# Ω) 3112; and the more versatile two-range 3114 (500V/200MΩ & 1000V/200MΩ)

## Autoranging

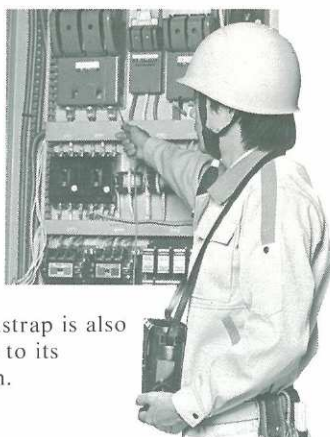
The MΩ meter circuitry is divided into three ranges of 2, 20 and 200MΩ. Ranging between them is fully automatic, requiring no operator attention.

## LED Illuminated Display

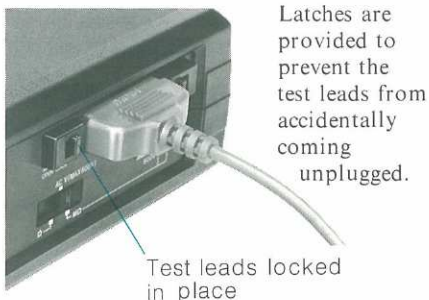
Since many insulation resistance measurements are made in poorly lighted locations, the display is thoughtfully lighted by LED.

## Neckstrap Case for Hands-Free Operation

Considering also that the operator needs both his hands free to work safely, the case with neckstrap comes standard with either model. Operation of the meter when suspended from the neckstrap is also extremely simple, thanks to its vertically-oriented design.



## Test Leads Locked in Place



## 3114 DIGITAL MΩ HI TESTER

### Outstanding Features



### Two Ranges to Double Usability

One instrument gives you insulation resistance ranges of 500V/200MΩ, and 1000V/200MΩ, effectively doubling the value of the instrument.

### Also Provides AC Voltage and Ohms Measurement Capability

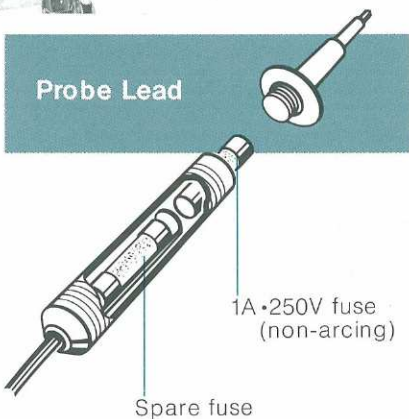
Voltages up to AC 600V and ohms up to 2kΩ may also be measured, permitting a check of voltage at the insulation resistance measurement point, or for use in conducting continuity tests.

### Superior Voltage Stability Characteristics

Unlike previous insulation resistance meters, values falling below center-scale (of MΩ functions) may also be measured at voltages exceeding the instruments voltage rating (500 or 1000V).

## Display Hold Function

The meter reading is held for approximately 20 seconds after the measurement is complete and the power turned OFF, giving you plenty of time to take notes as required. The hold function is automatically cleared however, should you turn the power back ON and quickly move to the next measurement.



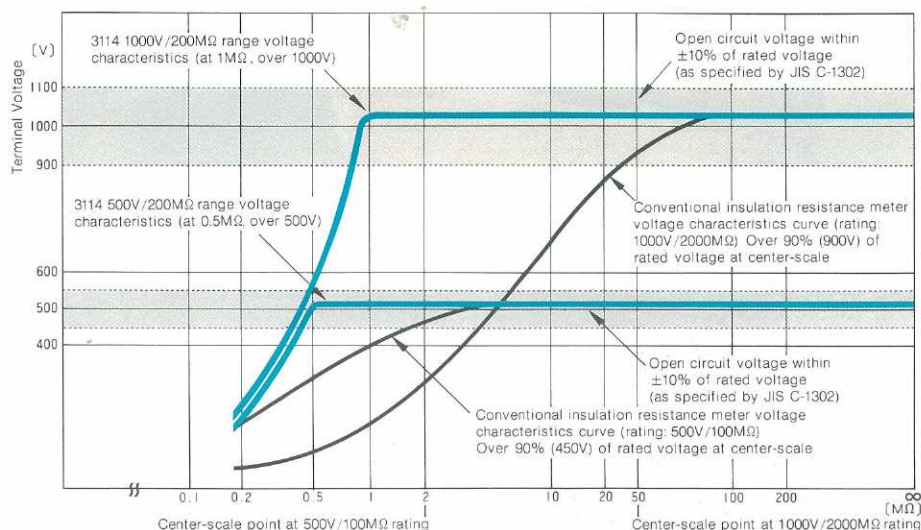
## Low Battery Display

Batteries below proper operating voltage are indicated by a minus sign (–) appearing in the MSD column.



● Note that the difference in power dissipation due to the resistance of the DUT also affects insulation resistance measurements. For example, the low battery minus sign may appear for a low resistance, but high resistance devices can still be measured accurately. Thus, if the minus sign does not appear, the measurement is good. (This also means that you can get maximum life from the batteries.)

※DUT: Device-Under-Test



## Instrument Specifications

General: 3112-3114

Basic Operating Principle: Integrating circuit  
Display: LED. When 1 appears in MSD column, the LSD column digit is blanked. (Except for overrange)

Range Switching: Autoranging for MΩ function (2, 20, 200MΩ)

Overrange Display: 1 appears in MSD column, all other digits are blanked. (Except for AC V function)

Low Battery Display: Minus sign (–) appears in display.

Response Time: 3 sec. or less. (Indicates settling time after obtaining overrange mark when purely resistive sample is measured with MΩ function.)

Sampling Rate: 2 sampls/second (approx.)  
Display Hold Function: Value in display at the time power is turned OFF held for approx. 20 sec.

Operating Temperature/Humidity: 0~40°C / < 80% RH (no condensation)

Storage Temperature: –10~50°C (no condensation)

Temperature Characteristics: Accuracy ±2% rdg. at 0~40°C (Ω: ±2% rdg. ±2dgt.)

Insulation Resistance: Over 50MΩ; circuit-to-case voltage of 500V DC

Dielectric: Circuit-to-case voltage of 2000V AC, for 1 min.

Power Source: Eight size AA (SUM-3) batteries

Battery Life, Continuous Operation:

3112 in ∞MΩ : Approx. 15 hrs.

3114 in ∞MΩ : Approx. 8 hrs.

Dimensions: 60H×118W×165Dmm (approx.)

Weight: 700 g (approx.)

Standard Accessories: Carrying case; Probe lead; Clip lead; Spare fuse (1A, 250V non-arcing)

※MSD: Most-Significant-Digit

※LSD: Least-Significant-Digit

## Switched Probe Available

In addition to the special probe leads provided standard with the 3112 and 3114, the 9125 Switched Probe is also available optionally. Its use allows you to lock the power ON, controlling ON/OFF operations from the probe, resulting in more efficient battery usage and additional safety.



## Individual Model Specifications

Parameter	Model	3112	3114	
<b>Insulation Resistance Meter</b>				
Rated Voltage		250V	500V	1000V
Rated Resistance		200MΩ	200MΩ	200MΩ
Measurement Range		0~1.99MΩ 2~19.9MΩ 20~199MΩ	0~1.99MΩ 2~19.9MΩ 20~199MΩ	
Accuracy		Under 20MΩ ±2%rdg. ±2dgt.  (at 23 ±5°C, <80% RH) Over 20.1MΩ ±5%rdg. ±2dgt.	Under 50MΩ ±2%rdg. ±2dgt.  Over 50.1MΩ ±5%rdg. ±2dgt.	Under 100MΩ ±2%rdg. ±2dgt.  Over 101MΩ ±5%rdg. ±2dgt.
Measurement Terminal Voltage		±10% of rated voltage at infinite resistance  (3114 conforming to VDE) Over 90% of rated voltage at 1MΩ	Under +10% of rated voltage at infinite resistance  Over 500V at 0.5MΩ to infinity	Under +10% of rated voltage at infinite resistance  Over 1000V at 1MΩ to infinity
Overload Voltage		250V AC, 1min.	600V AC, 1min.	
<b>AC Voltmeter</b>				
Measurement Range		0~600V	0~600V	
Accuracy		±1%rdg. ±3dgt. (50, 60Hz)	±1%rdg. ±3dgt. (50, 60Hz)	
Input Voltage		360kΩ (approx.)	240kΩ (approx.)	
Overload Voltage		Max. 600V AC, 1min.	Max. 600V AC, 1min.	
<b>Ohmmeter</b>				
Measurement Range		No ohms function	0~1.99kΩ	
Accuracy			±1%rdg. ±3dgt.	
Open Circuit Voltage			8~13V DC	
Overload Voltage			Max. 120V AC: 1A, 250V fuse (non-arcing) protected	

Accessory available 9125 Switched Probe

Standard packing (Double carton box)	Model	Sets	N.W.	G.W.	M <sup>3</sup>
	3112	20	23kg	26kg	0.13m <sup>3</sup>
	3114	20	23kg	26kg	0.13m <sup>3</sup>

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