













## Decision Function

	Model 3153	Model 3159	Model 3158
<b>Decision method</b>	Window comparison method (digital specification)		
<b>Decision results</b>	UPPER-FAIL: Measured current (insulation resistance value) exceeded the specified upper bound. PASS: Measured current (insulation resistance value) was between the specified upper and lower bounds during the specified time elapsed LOWER-FAIL: Measured current (insulation resistance value) was less than the specified lower bound (Note: Model 3158 has no insulation resistance function)		
<b>Decision processing</b>	For each decision result, output the display portion, the beeper sound, and EXT I/O signal		
<b>Specification ranges</b>	Voltage withstand testing: ACV: 0.1 to 100 mA (upper bound) / 0.1 to 99 mA (lower bound) DCV: 0.1 to 10 mA (upper bound) / 0.1 to 9.9 mA (lower bound) Insulation testing: 0.10 to 9999 MΩ (same upper/lower bounds)	Voltage withstand testing: 0.1 to 120 mA (upper bound) / 0.1 to 119 mA (lower bound) Insulation testing (Model 3159 only): 0.2 to 2000 MΩ (same upper/lower bounds)	
<b>Specification resolution</b>	Voltage withstand testing: 0.1 mA (0.1 to 9.9 mA), 1 mA (10 to 100 mA) Insulation testing: 0.01 MΩ (0.10 to 9.99 MΩ), 0.1 MΩ (10.0 to 99.9 MΩ), 1 MΩ (100 to 9999 MΩ)	Voltage withstand testing: 0.1 mA (0.1 to 9.9 mA), 1 mA (10 to 120 mA) Insulation testing (Model 3159 only): 0.01 MΩ (0.2 to 2 MΩ), 0.1 MΩ (2.1 to 20 MΩ), 1 MΩ (21 to 200 MΩ), 10 MΩ (210 to 2000 MΩ)	

## Timers

	Model 3153	Model 3159	Model 3158
<b>Testing timer</b>	<b>Specification range:</b> 0.3 to 999 s <b>Specification resolution:</b> 0.1 s (0.3 to 99.9 s), 1 s (100 to 999 s) <b>Accuracy:</b> ±0.5% of specified value	<b>Specification range:</b> 0.5 to 999 s <b>Specification resolution/accuracy:</b> 0.1 s (0.5 to 99.9 s), ±50 ms; 1 s (100 to 999 s) ±0.5 s	
	<b>Action:</b> (when ON is specified) after starting, the countdown from the specified time is displayed. (when OFF is specified) displays the elapsed time from starting		
<b>Ramp timer (withstand test time)</b>	<b>Specification range:</b> 0.1 to 99.9 s ramp-up and -down specified separately <b>Specification resolution/accuracy:</b> 0.1 s, ±0.5% of specified value	...	
<b>Delay timer (insulation resistance test time)</b>	<b>Specification range:</b> 0.1 to 99.9 s <b>Specification resolution/accuracy:</b> 0.1 s, ±0.5% of specified value <b>Action:</b> specify a delay time after testing is set to begin to inhibit decisions during that time	<b>Non-deterministic interval:</b> 0.5 s (Mask time until determination begins during insulation resistance testing)	...

## Interfaces

	Model 3153	Model 3159	Model 3158
<b>EXT I/O</b>	Open-collector outputs, active low, max. 30V DC loaded voltage, all signal lines photocoupler-isolated		
<b>EXT SW</b>	START, STOP, SW.EN (panel terminal switch enabled), connection point inputs		
<b>RS-232C</b>	Start-stop synchronization, full duplex, 9600 or 19200 bps	Start-stop synchronization, full duplex, 9600 bps	
<b>GP-IB</b>	IEEE 488.2 (1987) compliant	...	

## General Specifications

	Model 3153	Model 3159	Model 3158
<b>Display</b>	Fluorescent display tube (digital display), analog meter		
<b>Monitor functions</b>	Output voltage, detected current, measured resistance		Output voltage, detected current
<b>Monitor period</b>	2 times per second minimum		
<b>Operating temperature range</b>	0 to 40 °C, 80% RH maximum (non-condensating)		
<b>Storage temperature range</b>	-10 to 50 °C, 90% RH maximum (non-condensating)		
<b>Temperature and humidity range for guaranteed accuracy</b>	23 ± 5 °C, 80% RH maximum (non-condensating) (after 10-min. warm-up for 3153, or 5-min. warm-up for 3158 and 3159)		
<b>Operating environment</b>	Indoors, up to 2000m ASL		
<b>Power supply voltage</b>	100 to 240V AC (installed fuse depends on actual voltage, so specify supply voltage when ordering) 100 to 120V AC: installed fuse 250V T10AL 200 to 240V AC: installed fuse 250V T5AL	100V AC (3159), 120V AC (3159-01), 220V AC (3159-02), 230V AC (3159-03), 240V AC (3159-04)	120V AC (3158-01), 220V AC (3158-03), 230V AC (3158-04), 240V AC (3158-05)
<b>Power supply frequency</b>	50 or 60 Hz		
<b>Max. power consumption</b>	1000 VA	800 VA	
<b>Dimensions</b>	Approx. 320 (W) × 155 (H) × 480 (D) mm	Approx. 320 (W) × 155 (H) × 330 (D) mm	Approx. 320 (W) × 155 (H) × 263 (D) mm
<b>Mass</b>	Approx. 18 kg	Approx. 18 kg (3159), 20.5 kg (3159-01), 21.5 kg (3159-02 to 3159-04)	Approx. 16 kg (3158-01), 18 kg (3158-03 to 3159-05)
<b>Supplied accessories</b>	9615 H.V. TEST LEADS (high voltage side and return, one each), POWER CORD, EXTRA FUSE		
<b>Options</b>	9613 REMOTE CONTROL BOX (SINGLE), 9614 REMOTE CONTROL BOX (DUAL), 9637 RS-232C CABLE (9-pin Dsub to 9-pin Dsub), 9638 RS-232C CABLE (9-pin Dsub to 25-pin Dsub), 9267 SAFETY TEST DATA MANAGEMENT SOFTWARE		
	3930 HIGH VOLTAGE SCANNER 9151-02 GP-IB CONNECTOR CABLE (2m) 9151-04 GP-IB CONNECTOR CABLE (4m)	9616 WARNING LAMP	



- Six test voltages from 25 to 1000V
- Stores 10 setting states
- Easy standards testing with comparator timer function
- Automatic electrical discharge feature
- Minimize instability with slow sampling
- Record changes with analog output



[Measurement Voltage/Range (Auto/Manual range switching)]

Measurement voltage	25V	50V	100V	250V	500V	1000V
Measurement range	2,000, 20.00 and 200.0 MΩ		2,000, 20.00 and 2000 MΩ		2,000, 20.00, 200.0 and 4000 MΩ	
Accuracy	±2% rdg., ±5 dgt.	0 to 20.00 MΩ		0 to 100.0 MΩ		0 to 999 MΩ
	±5% rdg.	19.0 to 200.0 MΩ		19.0 to 2000 MΩ	100.1 to 2000 MΩ	1000 to 4000 MΩ
Unloaded voltage	1 to 1.2 times the measurement voltage					
Min. meas. resistance	0.025 MΩ	0.05 MΩ	0.1 MΩ	0.25MΩ	0.5MΩ	2MΩ
Rated meas. current	1 to 1.2 mA					0.5 to 0.6 mA
Short-circuit current	1.2 mA or less					0.6 mA or less

3153 AUTOMATIC INSULATION / WITHSTANDING HiTESTER

■ Options

- 3930 HIGH VOLTAGE SCANNER
- 9613 REMOTE CONTROL BOX (SINGLE)
- 9614 REMOTE CONTROL BOX (DUAL)
- 9151-02 GP-IB CONNECTOR CABLE (2m)
- 9151-04 GP-IB CONNECTOR CABLE (4m)
- 9637 RS-232C CABLE (1.8 m) (9pin-9pin/Cross)
- 9638 RS-232C CABLE (1.8 m) (9pin-25pin/Cross)
- 9267 SAFETY TEST DATA MANAGEMENT SOFTWARE

3159 INSULATION / WITHSTANDING HiTESTER (100V AC)

- 3159-01 INSULATION / WITHSTANDING HiTESTER (120V AC)
- 3159-02 INSULATION / WITHSTANDING HiTESTER (220V AC)
- 3159-03 INSULATION / WITHSTANDING HiTESTER (230V AC)
- 3159-04 INSULATION / WITHSTANDING HiTESTER (240V AC)

■ Options

- 9613 REMOTE CONTROL BOX (SINGLE)
- 9614 REMOTE CONTROL BOX (DUAL)
- 9616 WARNING LAMP
- 9637 RS-232C CABLE (1.8 m) (9pin-9pin/Cross)
- 9638 RS-232C CABLE (1.8 m) (9pin-25pin/Cross)
- 9267 SAFETY TEST DATA MANAGEMENT SOFTWARE

- 3158-01 AC WITHSTANDING VOLTAGE HiTESTER (120V AC)
- 3158-03 AC WITHSTANDING VOLTAGE HiTESTER (220V AC)
- 3158-04 AC WITHSTANDING VOLTAGE HiTESTER (230V AC)
- 3158-05 AC WITHSTANDING VOLTAGE HiTESTER (240V AC)

■ Options

- 9613 REMOTE CONTROL BOX (SINGLE)
- 9614 REMOTE CONTROL BOX (DUAL)
- 9637 RS-232C CABLE (1.8 m) (9pin-9pin/Cross)
- 9638 RS-232C CABLE (1.8 m) (9pin-25pin/Cross)
- 9267 SAFETY TEST DATA MANAGEMENT SOFTWARE



9613  
REMOTE CONTROL BOX (SINGLE)



9614  
REMOTE CONTROL BOX (DUAL)



9615  
H.V. TEST LEADS



9616  
WARNING LAMP  
(100V AC, 0.1A)

When using Model 9616 with Models 3153 or 3158, please contact HIOKI for specific details.