

## Guardian 1000 Series Hipot Testers

### Multi-Purpose AC/DC/IR/SC Hipot Testers

#### USES:

- Production Testing of Appliances, Instruments and Information Technology Equipment in Accordance with UL, IEC, TÜV and Other Standards such as EN60335, EN60950, EN61010, CSA C22.2 No. 1010.1, UL3111 and UL1950
- Transformer Electrical Safety Testing
- Electric Motor Safety Testing
- Testing a Variety of Electronic Components

#### FEATURES:

- Real and Total Current; 30mA AC, 10mA DC
- Programmable Output Voltage to 5kV AC and 6kV DC
- Resistance Measurements from 0.1MΩ to 50GΩ
- Programmable Ramp, Test & Fall Times
- Programmable High & Low Limits
- Open/Short Circuit Check
- Ground Continuity Check with 1ohm Limit
- Arc Detection with Programmable Limit
- Quick Discharge of DUT in IR and DC Hipot
- Storage of 99 Tests Setups with Multiple Steps per Measurement
- Front Panel Lockout
- Remote I/O & RS232 Interfaces, Std.
- IEEE-488 or Printer Interfaces, Opt.
- 8 Channel Scanner (1030S)

#### Introduction

A complete dielectric testing solution, with three models from which to choose. The Guardian 1010 for AC Hipot testing, the Guardian 1030 for AC/DC Hipot testing and insulation resistance (IR) measurements; and the Guardian 1030S which combines both AC and DC Hipot tests and IR measurements with eight HV scan channels. All models have Open/Short Circuit detection and Load/Line regulation to ensure proper device connection and measurement integrity. The digital display and user friendly controls allow test parameters and limits to be set without the high voltage activated.

#### Description

**The Guardian 1010 AC Hipot Tester** performs AC dielectric withstand tests. The test voltage can be programmed in the range from 50VAC to 5kVAC with a resolution of 1V. The maximum total output current is 30mA.

**The Guardian 1030 AC/DC/IR Hipot Tester** has all the features of the Guardian 1010 with the addition of DC hipot and IR measurement capabilities. The test voltage can be programmed in the range from 50VDC to 6kVDC with a resolution of 1V. The maximum total current is 10mA. The IR measurement range is from 0.1MΩ to 50GΩ with test voltages from 50 to 1000VDC.

**The Guardian 1030S AC/DC/IR/SC Hipot Tester** has all of the features of the Guardian 1030 plus eight HV Scan Channels for multi-point testing.

**Real and Total Current Measurement:** Accurately measure the leakage current of highly capacitive devices by separating the real and reactive current.

**Ground Fault Interrupt (GFI):** Provides an extra level of safety for the operator and equipment. The instrument shuts down when the current balance exceeds 0.5mA. G1000 Series units also have an interlock for use with palm switches, light curtains, hoods and other safety switches.

**Quick DUT Discharge:** In both the DC hipot and IR tests the device under test is discharged back through the HV transformer for a rapid and safe discharge.

**Ground Continuity Check:** All of the Guardian 1000 Series units have a ground continuity check feature to determine that the resistance, between the ground blade of the power cord and any exposed metal on the product, is less than 1 ohm.

**Open/Short Circuit Mode:** All Guardian 1000 Series models have OS mode to detect connection of the device in order to prevent false readings. Open ensures the device under test is connected properly and Short ensures the device is not shorted prior to applying the high voltage. The Open value is programmable from 10-100% and the Short value from 100-500%.



*For more detailed information on specifications, pricing and special purchase, rent and lease options, contact us at:*

[www.quadtech.com](http://www.quadtech.com)

800-253-1230



G1030S: EMC only



## Guardian 1010, 1030 & 1030S

<b>AC Output Voltage:</b>	Range: 50V to 5000V AC Resolution: 1Volts/step Frequency: 50/60 Hz selectable Waveform: Sinusoidal Regulation: +/- (1% of setting +5V)
<b>Voltage Display:</b>	Accuracy: +/- (1% of reading + 5V) Resolution: 1 Volt
<b>AC Current Display:</b>	Total and Real Current Range: 0.001mA to 30mA AC Resolution: 1µA Accuracy: +/- (1% of reading + 5cnt) Total Accuracy: +/- (5% of reading + 20cnt) Real
<b>High/Low Limit Test:</b>	Range: 0.001mA to 30mA AC Low limit can be turned OFF

## Guardian 1030 & 1030S

<b>DC Output Voltage:</b>	Range: 50V to 6000V DC Resolution: 1Volts/step Regulation: +/- (1% of setting +5V)
<b>Voltage Display:</b>	Accuracy: +/- (1% of reading + 5V) Resolution: 1 Volt
<b>DC Current Display:</b>	Range: 0.0001mA to 10mA DC 3 Ranges: .0001mA - 0.3mA, 0.31mA - 3mA, 3.1mA - 10mA Accuracy: +/- (1% of reading + 5cnt)
<b>High/Low Limit Test:</b>	0.1µA to 10mA DC Low limit can be turned OFF
<b>Charging Current:</b>	10mA max
<b>Insulation Resistance:</b>	Range: 0.1MΩ - 50GΩ 1M - 1G: +/- (5% + 10 cts), ≥500V 1G - 10G: +/- (10% + 10 cts), ≥500V 10G - 50G: +/- (15% + 10 cts), ≥500V 0.1M - 1G: +/- (10% + 10 cts), <500V
<b>IR Output Voltage:</b>	Range: 50V to 1000V DC Accuracy: +/- (1.5% of setting +5V)
<b>High/Low Limit Test:</b>	0.1MΩ - 50GΩ High limit can be turned OFF

## Guardian 1030S

<b>Scan Channels:</b>	8 HV Scan Channels
<b>Test Cables:</b>	8 Custom Banana (unterminated)

## Common Features

<b>Open/Short Detection:</b>	Voltage <100V, Frequency: 600Hz Open: 10-100%; Short: 100-500%
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## Ordering Information

Guardian 1010 AC Hipot Tester  
Guardian 1030 AC/DC/IR Hipot Tester  
Guardian 1030S AC/DC/IR/SC Hipot Tester

### **Includes:**

150665 Instruction Manual  
700070 Power Cable  
S02 Test Leads  
700100 Ground Continuity Lead  
Calibration Certificate Traceable to NIST  
Lead Set: (8) Unterminated (1030S only)

### **Optional Accessories:**

Calibration Data  
S02 HV Lead Set, 1m, (std w/unit)  
S03 Corded Product Adapter(115V)  
S04 HV Lead Set, 2m  
S05 Foot Switch  
S06 High Voltage Probe  
S07 Power Entry Adapter Cable  
S08 Gun Probe  
S09 HV Lead, 1 meter, unterminated  
S10 HV Lead, 2 meters, unterminated

S11 Gun Probe with remote start  
S12 Load Box, resistive  
S14 Load Box, custom resistors  
S15 Interconnection Cable to S50  
G16 International Power Strip  
G25 Corded Product Adapter (240V)  
G38 Printer Interface(replaces IEEE)  
G39 IEEE-488 Interface  
G40 Scanner Lead Set (8), with Clips for G1030S only

## Common Features

<b>Arc Detection:</b>	Arc Level: adjustable OFF or 1mA - 15mA AC & 10mA DC Arc Duration: > 10µs
<b>Indication:</b>	Pass/fail lights, audible sound
<b>Time:</b>	Ramp: 0.1 to 999s (+/-20ms), OFF Test: 0.1 to 999s (+/-20ms), Continuous Fall: 0.1 to 999s (+/-20ms), OFF
<b>Quick Discharge:</b>	Discharge of voltage across DUT back through the HV transformer
<b>Output Cutoff:</b>	<0.4msec after limit exceeded
<b>Ground Continuity:</b>	High Limit: 1Ω Accuracy: +/-0.2Ω
<b>Ground Fault Interrupt:</b>	Automatic instrument shutdown for current imbalance >0.5mA
<b>Standard Interfaces:</b>	RS232, Remote Inputs: Start, Stop and Interlock Characteristics: 24V Active Low, Pulse Width ≥20ms. Outputs: Pass/Fail/Under Test Characteristics: Dry Contact relay Ele. Characteristics: 120V 100mA max. Logic: Closed if True Connector: 9 pin Male D-Series
<b>Optional Interfaces:</b>	IEEE 488 or Printer
<b>Test Setups:</b>	99 Memory Locations, 99 Steps, max 500
<b>Connectors:</b>	Front Connection (HV and RTN) HV OUTPUT (Custom Banana) RTN/LOW (Binding Post)
<b>Front Panel Lockout:</b>	Key press with or without memory recall
<b>Miscellaneous:</b>	Zero Offset
<b>Dimensions:</b>	(w x h x d):12.8x4.2x16in (320x105x400mm)
<b>Weight:</b>	<b>1010 &amp; 1030:</b> 30.5 lbs (14kg) net, 36 lbs (16.5kg) ship <b>1030S:</b> 32.5 lbs (15kg) net, 38 lbs (17.5kg) ship
<b>Environmental:</b>	Meets MIL-T-28800E, Type 3, Class 5 Operating: 0°C to + 40°C Humidity: <70% Storage: - 10°C to + 60°C
<b>Power:</b>	•90 - 130V AC +50 or 60Hz •200 - 250V AC +500W max

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