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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 Guardian1030 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 transformef 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%.

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800-253-1230

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G1030S: EMC only

Product Specifications

Guardian 1010, 1030 & 1030S

AC Output Voltage: Range: 50V to 5000V AC
Resolution: 1Volts/step
Frequency: 50/60 Hz selectable
Waveform: Sinusoidal
Regulation: +/-(1% of setting +5V)

Voltage Display: Accuracy: +/-(1% of reading + 5V)
Resolution: 1 Volt

AC Current Display: Total and Real Current
Range: 0.001mA to 30mA AC
Resolution: 1µA
Accuracy:+/-(1% of reading + 5cnt) Total
Accuracy:+/-(5% of reading + 20cnt) Real

High/Low Limit Test: Range: 0.001mA to 30mA AC
Low limit can be turned OFF

Guardian 1030 & 1030S

DC Output Voltage: Range: 50V to 6000V DC
Resolution: 1Volts/step
Regulation: +/-(1% of setting +5V)

Voltage Display: Accuracy: +/-(1% of reading + 5V)
Resolution: 1 Volt

DC Current Display: Range: 0.0001mA to 10mA DC
3 Ranges: .0001mA - 0.3mA,
0.31mA - 3mA, 3.1mA - 10mA
Accuracy:+/-(1% of reading + 5cnt)

High/Low Limit Test: 0.1µA to 10mA DC
Low limit can be turned OFF

Charging Current: 10mA max

Insulation Resistance: 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

IR Output Voltage: Range: 50V to 1000V DC
Accuracy: +/-(1.5% of setting +5V)

High/Low Limit Test: 0.1MΩ - 50GΩ
High limit can be turned OFF

Guardian 1030S

Scan Channels: 8 HV Scan Channels

Test Cables: 8 Custom Banana (unterminated)

Common Features

Open/Short Detection: Voltage <100V, Frequency: 600Hz
Open: 10-100%; Short: 100-500%

Common Features

Arc Detection: Arc Level: adjustable OFF or
1mA - 15mA AC & 10mA DC
Arc Duration: > 10µs

Indication: Pass/fail lights, audible sound

Time: Ramp: 0.1 to 999s (+/-20ms), OFF
Test: 0.1 to 999s (+/-20ms), Continuous
Fall: 0.1 to 999s (+/-20ms), OFF

Quick Discharge: Discharge of voltage across DUT back through the HV transformer

Output Cutoff: <0.4msec after limit exceeded

Ground Continuity: High Limit: 1Ω
Accuracy: +/-0.2Ω

Ground Fault Interrupt: Automatic instrument shutdown for current imbalance >0.5mA

Standard Interfaces: 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

Optional Interfaces: IEEE 488 or Printer

Test Setups: 99 Memory Locations, 99 Steps, max 500

Connectors: Front Connection (HV and RTN)
HV OUTPUT (Custom Banana)
RTN/LOW (Binding Post)

Front Panel Lockout: Key press with or without memory recall

Miscellaneous: Zero Offset

Dimensions: (w x h x d):12.8x4.2x16in
(320x105x400mm)

Weight: **1010 & 1030:** 30.5 lbs (14kg) net,
36 lbs (16.5kg) ship
1030S: 32.5 lbs (15kg) net,
38 lbs (17.5kg) ship

Environmental: Meets MIL-T-28800E, Type 3, Class 5
Operating: 0°C to + 40°C
Humidity: <70%
Storage: - 10°C to + 60°C

Power: •90 - 130V AC •50 or 60Hz
•200 - 250V AC •500W max

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

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