



Guardian

USES:

- Production and Compliance Testing of Appliances, Instruments and Information Technology Equipment in Accordance with UL, CSA, IEC, TUV 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
- Power Supply Safety Testing
- Verification of the Ground Connection on Products with a Three Prong Power Cord

FEATURES:

- Programmable output voltage to 5KV AC and 6KV DC
- Ground Bond Testing to 30A AC with Adjustable Limit
- Multi-point Scanner Option for High Voltage Switching of up to 64 Points
- Programmable Ramp and Test Times
- Storage of 50 Tests Setups with 15 Steps per Setup
- Trip Current Programmable to 40mA AC and 20mA DC
- Front Panel Lockout via Password
- Standard IEEE and Remote Control Interfaces
- Optional RS232 Interface
- LabVIEW® Instrument Driver Software
- Insulation Resistance Measurements from 10MW to 10GW 1ohm Limit

5000 SafetyAnalyzer

AC/DC/IR/GC Electrical Safety Analyzer

Introduction

The Guardian 5000 is four instruments in one providing AC Hipot, DC Hipot, Insulation Resistance, and Ground Bond measurements from a single test connector in one versatile instrument. This provides a cost effective solution to electrical safety compliance testing with maximum flexibility for present and future requirements. Performing all of the electrical safety tests in one box can reduce test time, increase productivity and reduce the number of boxes requiring calibration.

Description

The **Guardian 5000 AC Hipot Tester** performs AC dielectric testing (hipot) over the voltage range from 100V to 5000VAC RMS. The maximum leakage current of 40mA RMS makes the Guardian 5000 ideal for testing devices with high leakage currents such as power supplies which have large filter or "Y" capacitors for noise reduction. Both the actual test voltage and total current are displayed during testing.

The **Guardian 5000 DC Hipot Tester** voltage range for DC dielectric testing is 100V to 6000VDC with a resolution of 10V. The maximum current leakage is 20mA which allows quick charging of capacitive devices. A quick discharge of the device when the measurement is complete, also minimizes test times.

The **Guardian 5000 Insulation Resistance** measurements are similar to a DC hipot but rather than displaying leakage current, resistance is calculated and displayed. The insulation resistance can be measured over the range of 10MΩ to 10GΩ with test voltages from 50VDC to 1000VDC in 1V steps.

The **Guardian 5000 Ground Bond** provides up to 30A AC for ground bond testing. The test current can be programmed from 1A to 30A in 0.1A steps. Hi current limit, test time, frequency and open circuit no load voltage can all be programmed. The offset feature can automatically compensate for any lead resistance.



For more detailed specifications, visit www.quadtech.com

For more information about special purchase, rent & lease options, call

1-800-253-1230
 Fax 1-978-461-4295
 Intl. 1-978-461-2100



Guardian 5000

AC Output Voltage:

Range: 100V to 5000V AC
 Resolution: 10 Volts / step
 Frequency: 50/60 Hz selectable
 Waveform: Sinusoidal
 Regulation: +/- (1% of setting +5V)

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

AC Current Display: Total current
 Range: 0.001 to 40mA AC
 Resolution: 0.001mA
 Accuracy: +/- (1.5% of reading + 5cnt)

High/Low Limit Test: 1mA to 40mA AC
 Accuracy: +/- (1% of limit +1mA)
 Low limit can be turned OFF

ArcDetection: Arc Level: >1mA to 40 mA & OFF in
 0.001mA / Step

DC Output Voltage

Range: 100V to 6000V DC
 Resolution: 10Volts / step
 Regulation: +/- (1% of setting +5V)

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

DC Current Display: Range: 1mA to 20mA DC
 Resolution: 0.001mA
 Accuracy: +/- (1% of reading + 5cnt)

High/Low Limit Test: 0.001mA to 20mA DC
 Low limit can be turned OFF

Arc Detection: Arc Level: >1mA to 40 mA & OFF in
 0.001mA / Step

Insulation Resistance

Range: 10MΩ - 10GΩ

Accuracy: +/- 5% >= 500V 10MΩ - 1GΩ
 +/-15% > 500V, 1GΩ - 10GΩ
 +/-10% < 500V, 1MΩ - 200MΩ
 +/- 15% < 200V, 200MΩ - 1GΩ

Voltage Range: 50V to 1000V DC

Voltage Accuracy: +/- (1% of setting +5V)

High/Low Limit Test: 10MΩ - 10GΩ
 High limit can be turned OFF

IR Test Delay: 0.3 to 99.9 seconds programmable in
 0.1 second steps

Ground Bond

Output Current: Range: 1.0 to 30.0A AC, setting
 0.1A / step

Ordering Information

| | | | |
|---|----------------------------|------------------------------|---|
| Guardian 5000 Electrical Safety Analyzer | | Optional Accessories: | |
| Includes: | | S05 | Foot Switch |
| 150206 | Instruction Manual | S06 | High Voltage Probe |
| 700070 | Power Cable | S10 | HV Lead, 2 meters, unterminated |
| S02 | Test Leads | S11 | Gun Probe with remote start |
| G15 | Ground Continuity Lead Set | S12 | Load Box, resistive |
| Calibration Certificate Traceable to NIST | | S14 | Load Box, custom resistors |
| | | S08 | Gun Probe |
| | | S09 | HV Lead, 1 meter, unterminated |
| | | G13 | Corded Product Adapter |
| | | G14 | Power Entry Adapter |
| | | G15 | GC Lead Set, high & low |
| | | G16 | International Power Strip |
| | | G22 | Rear Panel Connection (factory installed) |
| | | G23 | Rack Mount Ears |
| | | G25 | Corded Product Adapter (240V) |
| | | G26 | RS232 Interface |

Display: +/- (1% of setting + 0.3A)

Frequency: 50 or 60Hz Selectable

No Load Voltage: 6 to 15 V programmable

Resistance: Range: 0 - 500.0mV, 4 digits
 Accuracy: +/- (1% of reading + 3 cnts)

Hi Limit: 10 mV to 510 mV

Offset Function: 0 to 100 mV, user selectable

Test Time: 0.5 - 999sec(+/-20ms)

Common Features

AC/DC Test Time: Ramp: 0.1 to 99.9s (+/- 20ms)
 Test: 0.1 to 999s (+/- 20ms) and Continuous

Remote Control: Inputs: Start, Stop
 Characteristics: Optically Isolated with +24V Active Low, Pulse Width >1ms.
 Outputs: Pass/Fail/Under Test
 Characteristics: Dry Contact relay
 Ele. Characteristics: 120V 100mA max.
 Logic: Closed if True
 Connect: Terminal Strip & 9 pin D Serie

Test Setups: 50 Test Setups with 15 Steps each

Connectors: Front Connection and Rear Connections

Front Panel Lockout: Password

Safety Features: Fast Cutoff (<0.4ms) and Fast Discharge

Miscellaneous: Continuous Voltage on Fail
 Scanner Delay: 0.1 to 99.9, 0.1s/step

Indication: Pass/Fail lights, audible sound

Buzzer Level: 1,2,3 and Off

Standard Interface: IEEE488

Optional Interface: RS232
 Data Bits: 8, Parity: None, Stop Bits: 1
 Default Baud Rate: 9.6k
 EOS: CR + LF, Echo: Off

Dimensions: (w x h x d): 17 x 6.8 x 17.7in
 (430 x 175 x 450mm)

Weight: 53 lbs (24kg), Net
 60 lbs (27kg), Ship

Environmental: Operating: 0° to + 4°C
 Humidity: <75%
 Storage: - 10° to + 60°C

Power:

- 90 - 130V AC • 50 or 60Hz
- 200 - 250V AC • 300W max

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 5 Clock Tower Place, 210 East, Maynard MA 01754

