

Guardian

6000 Analyzer

AC/DC/IR/GC Electrical Safety Analyzer

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
- Simulated Leakage Current Measurement (UL1950)
- Built-in 8 Channel Scanner Option
- Programmable Ramp and Test Times
- Storage of 50 Tests Setups with 10 Steps per Setup
- Continuous Leakage Current Monitoring
- Trip Current Programmable to 40mA AC and 20mA DC
- Front Panel Lockout via Password
- Standard IEEE and Remote Control Interfaces
- Optional RS232 Interface
- Insulation Resistance Measurements from 100k Ω to 50G Ω 1ohm Limit

Introduction

The Guardian 6000 is five instruments in one providing AC Hipot, DC Hipot, Insulation Resistance, Leakage Current 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.

AC Hipot

The Guardian 6000 performs AC dielectric testing (hipot) over the voltage range from 100V to 5000VAC RMS. The maximum leakage current of 40mA RMS makes the Guardian 6000 ideal for testing devices with high leakage currents such as power supplies which have large filter or "Y" capacitors for noise reduction.

DC Hipot

The voltage range for DC dielectric testing is 100V to 6000VDC with a resolution of 1V. The maximum current leakage is 20mA which allows quick charging of capacitive devices. Combined with a quick discharge of the device when the measurement is complete, minimizes test times. Leakage currents can be monitored down to 0.1 μ A.

Insulation Resistance

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 100k Ω to 200G Ω with test voltages from 50VDC to 1000VDC in 1V steps.

Ground Bond

The Guardian 6000 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.

Simulated Leakage Current

A simulated line leakage test can be performed directly on the Guardian 6000. The simulation uses the recommended circuit for UL1950 and measures true RMS leakage current. The test voltage applied can be varied over the range of 100 to 400VAC.



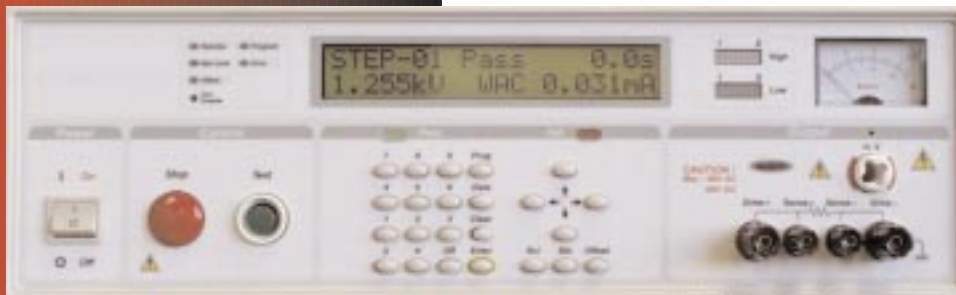
For more detailed specifications, visit www.quadtech.com

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

1-800-253-1230

Fax 1-508-485-0295

Intl. 1-508-229-0806



AC Output Voltage:

Range: 100V to 5000V AC
Resolution: 1 Volt / 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: +/- (1.0% of reading + 5cnt)

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

ArcDetection: Programmable Level and OFF,
0.001mA /step

DC Output Voltage

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

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

DC Current Display: Range: 0.1µA to 20mA DC
Resolution: 0.0001mA
Accuracy: +/- (1% of reading + 5cnt)

High/Low Limit Test: 0.0001mA to 20mA DC
Low limit can be turned OFF

Arc Detection: Programmable Level and OFF,
0.001mA /step

Insulation Resistance

Range: 100kΩ - 50GΩ
Accuracy: +/- 5% to +/- 15% depending
on voltage and resistance

Voltage Range: 50V to 1000V DC

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

High/Low Limit Test: 100kΩ - 50GΩ
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

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

Frequency: 50 or 60Hz Selectable

No Load Voltage: 6 to 15 V programmable

Resistance Range: 0 - 500.0mΩ, 4 digits
Accuracy: +/- (1% of reading + 3 counts)
Resolution: 1mΩ

Hi Limit: 10 mΩ to 510 mΩ

Offset Function: 0 to 100 mΩ, user selectable

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

Simulated Leakage Current

Output Voltage: Range: 50V to 400V AC, 50 or 60Hz.
Regulation: < (1% +5V) at Rated Load

AC Current Display: Range: 0.01 to 10mA, 0.003mA resolution
Accuracy: +/- (1%+5cnt), True RMS

Circuit: IEC 950, UL 1950, UL3101

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
Connector: Terminal Strip and 9 pin D
Series

Test Setups: 50 Test Setups with 10 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

IEEE Interface: IEEE488

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

Dimensions: (w x h x d): 17x6.8x17.7in
(430x175x450mm)

Weight: 53 lbs (24kg) Shipping: 60 lbs (27kg)

Environmental: Operating: 0° to +4°C
Humidity: <75%
Storage: -10° to +60°C
Warm-up Time: 1minute

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

Ordering Information

Guardian 6000 Electrical Safety Analyzer

Includes:

150354 Instruction Manual
700070 Power Cable
S02 Test Leads
G15 Ground Continuity Lead
Calibration Certificate Traceable to NIST

Optional Accessories:

Calibration Data
6000-01 Scanner, 8 Channel 5HV /3GC
6000-02 Scanner, 8 Channel 3HV/5GC
6000-03 Scanner, 8 Channel HV Rack Mnt.
S04 HV Lead Set, 2m
S05 Foot Switch
S08 Gun Probe

S09 HV Lead, 1 meter, unterminated
G13 Corded Product Adapter
G14 Power Entry Adapter
G16 International Power Strip
Gxx Rack Mount Ears
G25 Corded Product Adapter (240V)
G26 RS232 Interface

For more detailed specifications, visit www.quadtech.com
For more information about special purchase, rent & lease options, call
1-800-253-1230 • Fax 1-508-485-0295 • Intl. 1-508-229-0806

