

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 UL60950**
- **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:

- **Twin Port - Simultaneous Hipot & GB**
- **Programmable Output Voltage to 5KV AC and 6KV DC**
- **Ground Bond Testing to 30A AC (to 40A with Optional Transformer)**
- **Insulation Resistance Measurements from 100k Ω to 50G Ω**
- **Open/Short Circuit Detection Mode**
- **Programmable Ramp, Dwell & Test Times**
- **Storage of 100 Test Setups, 50 Steps Each**
- **Continuous Leakage Current Monitoring**
- **Programmable Trip Current to 40mA AC and 12mA DC**
- **Front Panel Lockout via Password**
- **Standard RS-232 & Remote I/O Interfaces**
- **Optional IEEE-488, Printer Interfaces**
- **Optional Built-in 8 Channel Scanner**
- **Optional CaptivATE Automation Software for G6000 Plus**

6000 Plus

Electrical Safety Analyzer

with Revolutionary Twin Port Technology

Introduction

The Guardian 6000 Plus is the industry's first safety analyzer with simultaneous Hipot and Ground Bond capability providing a dramatic savings in test time. Five instruments in one, the G6000 Plus provides AC Hipot, DC Hipot, Insulation Resistance, Ground Bond and Open/Short measurements from a single test connection. Versatile and packed with features, the G6000 Plus is a cost effective solution to the full spectrum of electrical safety compliance testing.

Description

AC Hipot: AC dielectric testing over the voltage range from 50V to 5000VAC RMS. The maximum leakage current of 40mA RMS is ideal for testing devices with high leakage currents such as power supplies which have large filter or "Y" capacitors for noise reduction.

DC Hipot: DC dielectric testing from 50V to 6000VDC with a resolution of 1V. Leakage current can be continuously monitored from 0.1 μ A to 12mA DC.

Insulation Resistance: The G6000 Plus is capable of measuring IR from 100k to 50G Ω with test voltage from 50V to 1000VDC in 1V steps.

Quick Discharge: In both DC and IR modes, the device under test is discharged through the HV transformer resulting in a rapid and safe discharge.

Ground Bond: With test current from 1A to 30A in 0.1A steps and programmable current limits, test time, frequency and open circuit no load voltage, the G6000 Plus provides full GB testing capability. The offset feature automatically compensates for any lead resistance. A 40A GB option is also available.

Twin Port Technology: This patented feature allows for simultaneous Ground Bond and Hipot Testing. Decrease test time and increase device through-put.

Open/Short Circuit Detection Mode: Check for Opens and Shorts against a standard capacitance value, Cs, and have confidence the DUT is properly connected.

Optional Scanners: One internal and/or multiple external scanners may be added to the G6000 Plus for testing multiple devices simultaneously. Add up to 8 HV channels or a combination of HV and GB channels.

Standard Interfaces: The Remote I/O and RS-232 interfaces provide remote control and serial data collection capability for automated applications.



For more detailed specifications, visit

www.quadtech.com

1-800-253-1230

Fax 1-978-461-4295

Intl. 1-978-461-2100



Guardian 6000 Plus

AC Output Voltage:	Range: 50V to 5000V AC, 1V resolution Freq: 50-600 Hz, programmable in 1Hz steps Waveform: Sinusoidal Regulation: <(1% of setting +5V) at Rated Load
Voltage Display:	Accuracy: $\pm(1\%$ of reading + 5V) Resolution: 1Volt
AC Current Display:	Total current Range: 0.001 to 40mA AC Resolution: 1 or 10 μ A steps Accuracy: $\pm(1\%$ of reading + 5cnt)
High/Low Limit Test:	1 μ A to 40mA AC Low limit can be turned OFF
Arc Detection:	Programmable 1-20mA, Pulse Width 40 μ , 20 μ , 10 μ or 4 μ sec
DC Output Voltage:	Range: 50V to 6000V DC, 1V resolution Regulation: <(1% +5V) at Rated Load
Voltage Display:	Accuracy: $\pm(1\%$ of reading + 5V) Resolution: 1Volt
DC Current Display:	Range: 0.1 μ to 12mA DC Resolution: 0.1, 1 or 10 μ A steps Accuracy: $\pm(1\%$ or reading + 5cnt)
High/Low Limit Test:	0.0001mA to 12mA DC Low limit can be turned OFF
Arc Detection:	Programmable 1-10mA Pulse Width 40 μ , 20 μ , 10 μ or 4 μ sec
Insulation Resistance:	Range: 100k Ω - 50G Ω Accuracy: $\pm 5\%$ to $\pm 15\%$ depending upon voltage and resistance
Voltage Range:	50V to 1000V DC
Voltage Display:	$\pm(1\%$ of reading + 5V)
High/Low Limit Test:	100k Ω - 50G Ω Low limit can be turned OFF
Ground Bond:	
Output Current:	Range: 1.0 to 30.0A AC, setting .01A/step; *40A Regulation: $\pm(1\%$ of setting + 0.3A) Accuracy: $\pm(1\%$ of reading + 3 counts)
Frequency:	50 or 60Hz Selectable
No Load Voltage:	6 to 15 V Programmable
Resistance:	Range: 0.1m Ω - 510.0m Ω , 4 digits Accuracy: $\pm(1\%$ of reading + 3 counts) Resolution: 0.1m Ω
High Limit:	0.1m Ω to 510m Ω
Start Wait:	0.1 - 99.9sec

Common Features:

Open/Short Circuit Mode:	Check for Open & Short against a standard capacitance value (Cs); <100V, 600Hz
Offset Function:	0 to 100m Ω offset, user selectable AC Programmable Offset, 0-25mA
Test Time:	Ramp: 0.3 to 999s (± 20 ms), (AC/DC/IR) Dwell: 0 to 999s (± 20 ms), (DC only) Start Wait: 0.1 to 99.9s (± 20 ms), (GB only) Test: 0.3 to 999s (± 20 ms) or Continuous (ALL) Ramp, Dwell & Start Wait can be set to OFF
Remote Control:	Inputs: Start, Stop Characteristics: Optically Isolated, Low, Pulse Width >1ms. Outputs: Pass/Fail/Under Test Characteristics: Dry Contact relay Electrical Characteristics: 120V 100mA max. Logic: Closed if True Connector: Terminal Strip and 9 pin D Series
Test Setups:	100 Test Setups with 50 Steps each, 13 character Alpha-Numeric Label
Connectors:	Front and Rear 4- terminal connection
Display:	320 x 240 enhanced LCD with status indicators
Front Panel Lockout:	Key Lock with Password Fail Lock with Password
Safety Features:	Fast Cutoff (<0.4ms) & Fast Discharge (0.2s) Adjustable Discharge: .05-5.1kV DC
Miscellaneous:	Fail Retest; Continue on Fail PAUSE Mode: Program pause between steps
Indication:	Pass/Fail lights, audible sound; Remote, Lock, Offset & Error status indicators
Buzzer Level:	1,2,3 and Off
Standard Interfaces:	RS-232, Remote I/O Data bits: 8, Stop bits: 1; Parity: None Selectable Baud Rate: 300 - 19200
Optional Interfaces:	IEEE-488, Printer
Dimensions:	(w x h x d):17x5.25x18.5in (430x133x470mm)
Weight:	53 lbs (24kg) - Net, 60 lbs (27kg) Shipping
Environmental:	Operating: 0 to + 40° C, Humidity: <75% Storage: - 20 to + 70° C Warm-up Time: 1minute
Power:	• 90 - 130V AC • 50 or 60Hz • 200 - 250V AC • 800W max

Ordering Information

*GB to 40A with optional transformer

Guardian 6000 Plus Electrical Safety Analyzer		Optional Accessories	
Includes:		N/A	Calibration Data
150798	Instruction Manual	6000-01	Scanner, 8 Channel 5HV,3GC
S02	HV Lead Set, 1m	6000-02	Scanner, 8 Channel 3HV,5GC
G15	Ground Continuity Lead Set	6000-03	Scanner, 8 Channel HV
G14	Power Entry Adapter	S04	HV Lead Set 2m
4200-0300	AC Power Cable	S05	Foot Switch
520157	8A 250V Power Line Fuse	S08	Gun Probe
520053	4A 250V Power Line Fuse	S09	HV Lead, 1M, Underminated
N/A	Calibration Cert. Traceable to NIST	S10	HV Lead, 1M, Underminated
		G13	Corded Product Adapter (115V)
		G14	Power Entry Adapter
		G16	International Power Strip
		G24	Scanner Cable (5000 scanners)
		G25	Corded Product Adapter (240V)
		G38	Printer Interface (replaces IEEE)
		G39	IEEE-488 Interface
		G43	Rack Mount Kit
		G44	Barcode Scanner
		G45	40A Ground Bond Transformer

For more detailed specifications, visit www.quadtech.com • For more information about special purchase, rent & lease options, call:

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