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 100kΩ to 50GΩ
• 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

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 0.1µA to 12mA DC.

Insulation Resistance: The G6000 Plus is capable of measuring IR from 100kΩ to 50GΩ 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 information on specifications, pricing and special purchase, rent and lease options, contact us at:

www.quadtech.com
800-253-1230

Guardian 6000 Plus
Electrical Safety Analyzer
with Revolutionary Twin Port Technology

Hipot Testers • LCR Meters • Cable Testers • AC/DC Programmable Power Sources
• Megohmmeters • Milliohmeters
Guardian 6000 Plus

AC Output Voltage:
- Range: 50V to 5000V AC, 1V resolution
- Regulation: <1% of setting +5V) at Rated Load
- Freq: 50-600 Hz, programmable in 1Hz steps
- 50~60Hz : 1% + 5 cnts, > 60Hz: 3%+10 cnts
- Waveform: Sinusoidal

Voltage Display:
- Accuracy: ±1% of reading + 5V
- Resolution: 1 Volt

AC Current Display:
- Total current
- Range: 0.001 to 40mA AC
- Resolution: 1 or 10µA steps
- Accuracy: ±1% of reading + 5cnt

High/Low Limit Test:
- 1µA to 40mA AC
- Low limit can be turned OFF

Arc Detection:
- Programmable 1-20mA,
- Pulse Width 40µs, 20µs, 10µs or 4µsec

DC Output Voltage:
- Range: 50V to 6000V DC, 1V resolution
- Regulation: <1% +5V at Rated Load

Voltage Display:
- Accuracy: ±1% of reading + 5V
- Resolution: 1 Volt

DC Current Display:
- Range: 0.1µ to 12mA DC
- Resolution: 0.1, 1 or 10µA steps
- Accuracy: ±1% of reading + 5cnt

High/Low Limit Test:
- 0.0001mA to 12mA DC
- Low limit can be turned OFF

Arc Detection:
- Programmable 1-10mA
- Pulse Width 40µs, 20µs, 10µs or 4µsec

Insulation Resistance:
- Range: 50V - 1000V DC
- Accuracy: ±5% to ±15% depending upon voltage and resistance

Voltage Range:
- 100kΩ - 50GΩ

Voltage Display:
- ±1% of reading + 5V

High/Low Limit Test:
- 100kΩ - 50GΩ
- Low limit can be turned OFF

Ground Bond:

Output Current:
- Range: 1.0 to 30.0A AC, setting .01A/step; *40A
- Regulation: ±1% of setting + 0.3A
- Accuracy: ±1% of reading + 3 counts

Frequency:
- 50 or 60Hz Selectable

No Load Voltage:
- 6 to 15 V Programmable

Resistance:
- Range: 0.1mΩ - 510mΩ, 4 digits
- Accuracy: ±1% of reading + 3 counts
- Resolution: 0.1mV

High Limit:
- 0.1mΩ to 510mΩ

Start Wait:
- 0.1 - 99.9sec

*GB to 40A with optional transformer

Common Features:

Open/Short Circuit Mode:
- Check for Open & Short against a standard capacitance value (Cs): <100V, 600Hz

Offset Function:
- 0 to 100mΩ offset, user selectable
- AC Programmable Offset, 0-25mA

Test Time:
- Ramp: 0.3 to 999s (±20ms), (AC/DC/IR)
- Dwell: 0 to 999s (±20ms), (DC only)
- Start Wait: 0.1 to 99.9s (±20ms), (GB only)
- Test: 0.3 to 999s (±20ms) 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
- IEEE-488, Printer
- Selectable Baud Rate: 300 - 19200

Optional Interfaces:
- Data bits: 8, Stop bits: 1; Parity: None
- IEEE-488, Printer (replaces IEEE)
- 120V 100mA max.
- Characteristics: Dry Contact relay
- Logic: Closed if True

Dimensions:
- (w x h x d):17x5.25x18.5in (430x133x470mm)
- Electrical Characteristics: 120V 100mA max.
- Characteristics: Dry Contact relay
- Logic: Closed if True

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

Guardian 6000 Plus Electrical Safety Analyzer

Includes:
- Instruction Manual
- HV Lead Set, 1m
- Ground Continuity Lead Set
- Power Entry Adapter
- AC Power Cable
- 8A 250V Power Line Fuse
- 4A 250V Power Line Fuse
- Calibration Cert. Traceable to NIST

Optional Accessories:
- N/A
- Calibration Data
- 600-01 Scanner, 8 Channel 3HV,3GC
- 600-02 Scanner, 8 Channel 3HV,5GC
- 6000-03 Scanner, 8 Channel HV
- HV Lead Set 2m
- Foot Switch
- Gun Probe
- HV Lead, 1M, Unterminated
- HV Lead, 1M, Unterminated

Optional Interfaces:
- IEEE-488, Printer
- IEEE-488 Interface
- IEEE-488 Interface

Optional Accessories:
- N/A
- Calibration Data
- 600-01 Scanner, 8 Channel 3HV,3GC
- 600-02 Scanner, 8 Channel 3HV,5GC
- 6000-03 Scanner, 8 Channel HV
- HV Lead Set 2m
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