USES:
• Production or Compliance Testing of Appliances, Wire, Cable and Other Electrical Products which have High Leakage Current
• Testing to Safety Standards which Require or Recommend a 500VA Tester
• Testing of Electrical Products Requiring the Application of High AC or DC Voltages
• Testing of Transformers, Coils and Large Horsepower Motors

FEATURES:
• Programmable Output Voltage to 10kV AC, 12kV DC & 20kV DC
• Programmable Ramp and Test Times
• Programmable Trip Current
• Continuous Leakage Current Monitoring
• Insulation Resistance Measurements from 100kΩ to 50GΩ
• High and Low Test Limits
• Pause Mode
• Store & Recall 99 Tests Setups with up to 99 Steps per Setup
• Fast HV Cutoff & DUT Discharge
• Front Panel Lockout via Password
• Front & Rear Panel Connection
• RS232, Remote I/O - Standard
• IEEE-488, Printer - Optional
• Multi-Point Scanner Option for High Voltage Switching

Introduction
The Guardian 500VA, 10kV AC, 12kV DC & 20kV DC Hipot Testers are four different Hipot Testers designed for specific electrical safety test applications. The Guardian 500VA is intended for high leakage current measurements to 100mA, the Guardian 10kVAC for high voltage AC testing and the Guardian 12kVDC and 20kVDC for high voltage DC testing. The Guardian 500VA, 12kVDC and 20kVDC instruments also measure insulation resistance (IR). Selecting the right instrument for the specific application, provides a cost effective solution to special electrical safety compliance testing.

Description
The Guardian 500VA Hipot Tester is an economically priced AC/DC Hipot Tester for testing products which have high leakage current. With a programmable voltage range from 50 to 5000V AC and maximum current output of 100mA, the unit is ideal for load testing of capacitive devices. The instrument’s DC dielectric testing capability covers the range from 50 to 6000V DC, with a maximum current output to 20mA for quick charging of capacitive devices. DC leakage current can be monitored down to 0.1µA.

The Guardian 500VA also performs Insulation Resistance (IR) measurements, similar to DC hipot, except the product’s insulation resistance value is displayed directly in ohms. The resistance can be measured over the range of 100kΩ to 50GΩ at test voltages from 50 to 1000VDC.

In all cases, both high and low limits are operator programmable for quick and easy pass/fail testing. These dual limits are essential to ensure that the device under test is actually making contact with the tester. For consistent testing, up to 99 setups can be stored in instrument memory for later recall. An optional high voltage scanner is also available for testing multi-connection devices.

The Guardian 10kVAC Hipot Tester performs AC Hipot Testing only, over the voltage range from 100 to 10,000V AC. With maximum current output of 20mA, the instrument is capable of testing capacitive devices at high AC voltages. The 10kV unit contains many of the features of the 500VA Tester including programmable min/max limits, setup storage and arc detection.

The Guardian 12kVDC Hipot Tester performs DC Hipot Testing over the voltage range from 100 to 12,000V DC with a maximum leakage current output of 10mA. Additionally, the 12kV tester provides Insulation Resistance measurement capability over a range of 100kΩ to 50GΩ at test voltages from 100 to 1000V DC. The new improved discharge function allows for fast controlled discharge of the DUT.

The Guardian 20kVDC Hipot Tester performs DC Hipot Testing over the voltage range from 100 to 20,000V DC with a maximum leakage current output of 5mA. Additionally, the 20kV tester provides Insulation Resistance measurement capability over a range of 100kΩ to 50GΩ at test voltages from 100 to 1000V DC. The new improved discharge function allows for fast controlled discharge of the DUT.
Product Specifications

Guardian 500VA

AC Output Voltage: Range: 50V to 5000V AC, 1V resolution
Frequency: 50 or 60 Hz Programmable
Waveform: Sinusoidal
Regulation: <(1% + 10V) at Rated Load

Voltage Display: Accuracy: ±(1% of reading + 10V)
Resolution: 10V

AC Current Display: Total current
Range: 1mA to 100mA AC
Resolution: 0.001mA
Accuracy: ±(1.5% of reading + 5 counts)

High/Low Limit Test: 1mA to 100mA AC
Low limit can be turned OFF

DC Output Voltage: Range: 50V to 6000V DC, 1V resolution
Regulation: <(1% + 10V) at Rated Load

Voltage Display: Accuracy: ±(1% of reading + 5V)
Resolution: 1V

DC Current Display: Range: 0.1µA to 20mA DC
Resolution: 0.1µA
Accuracy: ±(1% of reading + 5 counts)

High/Low Limit Test: 0.1µA to 20mA DC
Low limit can be turned OFF

Guardian 10kVAC

AC Output Voltage: Range: 100V to 10kV AC, 10V resolution
Frequency: 50 or 60 Hz Programmable
Waveform: Sinusoidal
Regulation: <(1% + 10V) at Rated Load

Voltage Display: Accuracy: ±(1% of reading + 10V)
Resolution: 10V

AC Current Display: Total current
Range: 0.1mA to 20mA AC
Resolution: 0.001mA
Accuracy: ±(1.5% of reading + 5 counts)

High/Low Limit Test: 0.1mA to 20mA AC
Low limit can be turned OFF

Guardian 12kVDC

DC Output Voltage: Range: 100V to 12kV DC, 10V resolution
Regulation: <(1% + 10V) at Rated Load

Voltage Display: Accuracy: ±(1% of reading + 10V)
Resolution: 10V

DC Current Display: Range: 0.01mA to 10mA DC
Resolution: 0.001mA
Accuracy: ±(1% of reading + 5 counts)

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

Insulation Resistance: Range: 100kΩ - 50GΩ
Accuracy: ±5% to ±15% depending upon V and R

Voltage Range: 100V to 1000V DC
Voltage Accuracy: ±(5% of setting + 5V)
High/Low Limit Test: 100kΩ - 50GΩ
Low limit can be turned OFF

Guardian 20kVDC

DC Output Voltage: Range: 100V to 20kV DC, 20V resolution
Regulation: <(1.5% +5V) at Rated Load

Voltage Display: Accuracy: ±(1.5% of reading + 5 counts)
Resolution: 10V

DC Current Display: Range: 0.01mA to 5mA DC
Resolution: 0.001mA
Accuracy: ±(1.5% of reading + 5 counts)

High/Low Limit Test: 0.1µA to 5mA DC
Low limit can be turned OFF

Insulation Resistance: Range: 100kΩ - 50GΩ
Accuracy: ±5% to ±15% depending upon V and R

Voltage Range: 100V to 1000V DC
Voltage Accuracy: ±(5% of setting + 5V)
High/Low Limit Test: 100kΩ - 50GΩ
Low limit can be turned OFF

Common Features:

AC/DC Test Time: Ramp: 0.1 to 99.9s (±20ms)
Test: 0.1 to 99s (±20ms) and Continuous

Arc Detection: Programmable Level and OFF, 0.01mA/step

Remote Control: Inputs: Start,Stop
Outputs: Pass/Fail/Under Test
Connector: Terminal Strip and 9 pin D Series

Standard Interfaces: Remote I/O, RS-232
Optional Interfaces: IEEE-488, Printer

Test Setups: 99 Test Setups with 99 Steps each, Max. 500
Connectors: Front and Rear HV and GND Connections

Front Panel Lockout: Password
Safety Features: Fast Cutoff (<0.4ms) and Fast Discharge

Miscellaneous: Continuous Voltage on Fail
Indication: Pass/Fail lights, audible sound
Buzzer Level: 1, 2, 3, and Off

Dimensions: (w x h x d):17x6.8x17.7in (430x175x450mm)
Weight: Guardian 500VA
53 lbs (24kg) - Net, 60 lbs (27kg) Shipping
Guardian 10kVAC
44 lbs (20kg) - Net, 51 lbs (23kg) Shipping
Guardian 12kVDC
44 lbs (20kg) - Net, 51 lbs (23kg) Shipping
Guardian 20kVDC
44 lbs (20kg) - Net, 51 lbs (23kg) Shipping

Environmental: Operating: 0°C to +40°C,
Humidity: <75%
Storage: -20°C to +70°C
Warm-up Time: 1minute

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

For more detailed information on specifications, pricing and special purchase, rent and lease options, contact us at: www.quadtech.com or 800-253-1230

P/N: 030088/A8

Ordering Information

Guardian 500VA Hipot Tester
Guardian 10kVAC Hipot Tester
Guardian 12kVDC Hipot Tester
Guardian 20kVDC Hipot Tester

Includes:
150514 Instruction Manual
S012 HV Lead Set, 1m
S07* Power Entry Adapter Cable
700070 AC Power Cable
Calibration Certificate Traceable to NIST

Optional Accessories
G01* Calibration Data
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
G13* Corded Product Adapter (115V)
G16* International Power Strip
G25* Corded Product Adapter (240V)
G26 RS232 Interface
G27 Rack Mount Flanges
G38 Printer Interface (replaces IEEE 488)
G39 IEEE-488 Interface
5000-03* Scanner 8 Channel HV Rack Mount

*Maximum Voltage Rating: 5kV AC & 6kV DC