

# Guardian

## USES:

- Production Testing of Electrical Products such as Blenders, Fans and other Small Appliances in accordance with UL, CSA and IEC Standards.
- Electrical Safety Compliance Testing on a Variety of Products and Devices.

## FEATURES:

- Programmable Output Voltage to 5kV AC and 6kV DC
- Ground Bond Testing to 30A AC with Adjustable Limit
- Monitoring of DUT Current Draw
- Monitoring of DUT Power Consumption
- Line/Earth Leakage Current Measurement (UL1563/UL1950) with 5 Human Body Models
- Insulation Resistance Measurements from 100k $\Omega$  to 50G $\Omega$
- Programmable Ramp and Test Times
- Storage of 99 Tests Setups with 99 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

# 6200 Production Safety Analyzer

## For Single Phase Electrical Products

### Introduction

The Guardian 6200 is designed for fast, easy, production testing of electrical products such as blenders, fans and other small appliances in accordance with UL, CSA and IEC standards. Without changing the connection to the product, the tester is able to perform all the essential electrical safety tests in one unit, including AC/DC Hipot, Insulation Resistance, Ground Bond, Current Draw and Power Consumption measurements. Performing all these tests using one box increases production by reducing test time and eliminating multiple test stations.

### Description

**AC Hipot Test:** Performs AC dielectric testing (hipot) over the voltage range from 50V to 5000VAC RMS. Leakage current detection is programmable from 1 $\mu$ A to 40mA, making the 6200 unit ideal for testing electrical products and small appliances having a wide range of leakage currents.

**DC Hipot Test:** DC dielectric testing is possible from 50V to 6000V DC with leakage current detection down to 0.1 $\mu$ A. The maximum total output current of 20mA allows quick charging of capacitive devices and products.

**Insulation Resistance:** The insulation resistance test (similar to a DC hipot) calculates and displays a product's insulation resistance value in ohms. This resistance can be measured over the range of 100k $\Omega$  to 50G $\Omega$  with test voltages programmable from 50V to 1000V DC.

**Ground Bond:** The ground bond test, sometimes referred to as a high current continuity test, can be programmed from 1A to 30A AC for verifying the integrity of a product's ground system. Resistance measurements are displayed and a high limit is programmable between 0.1m $\Omega$  and 510m $\Omega$ .

**Power Monitoring Function\*:** The 6200 can monitor voltage across, current draw or power consumption of the product under test. This allows the manufacturer to functionally test the product and verify that the power consumption is within acceptable limits after performing the final electrical safety tests. Additionally, for compliance testing of electrical products, the analyzer can perform line/earth leakage tests in four possible configurations, five human body models, with programmable limits from 0.1 $\mu$ A to 9.999mA.

\* Note: This test requires input isolation transformer for proper operation.

For more detailed specifications, visit  
**[www.quadtech.com](http://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 6200

### AC Output Voltage:

Range: 50V to 5000V AC, 1V resolution  
Frequency: 50 or 60 Hz Programmable  
Waveform: Sinusoidal  
Regulation: <(1% +5V) at Rated Load

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

**AC Current Display:** Total current  
Range: 1μA to 40mA AC  
Resolution: 0.001mA  
Accuracy: +/- (1% + 5cnt)

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

**Arc Detection:** Programmable Level and OFF, >1mA

### DC Output Voltage:

Range: 50V to 6000V DC, 1V resolution  
Regulation: <(1% +5V) at Rated Load

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

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

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

**Arc Detection:** Programmable Level and OFF, >1mA

### Insulation Resistance:

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

**Voltage Range:** 50V to 1000V DC

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

**High/Low Limit Test:** 100kΩ - 50GΩ  
Low 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  
Accuracy: +/- (1% of setting + 0.3A)

**Display:** +/- (1% of reading + 3 counts)

**Frequency:** 50 or 60Hz Selectable

**No Load Voltage:** 6 to 15 V Programmable

**Resistance:** Range: 0.1mΩ - 510.0mΩ, 4 digits  
Accuracy: +/- (1% of reading + 3 counts)  
Resolution: 0.1mΩ

**Hi Limit:** 0.1mΩ to 510mΩ

**Offset Function:** 0 to 100mΩ offset, user selectable

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

### Functional/Power Consumption:

**Line Voltage Meter:** 0 - 300V AC, +/- (1% of reading + 5cnts)

**Line Current Meter:** 0 - 10A, +/- (5% of reading + 5cnts)

**Line Power Meter:** 1 - 2200VA

### Line Leakage Current:

**Input Voltage:** Range: 0V to 300V AC, 50 or 60Hz.

**AC Current Display:** Range Res. Accuracy  
0.0001-0.59mA 0.0002mA +/- (2% + 5cnts)  
0.6 - 9.999mA 0.003mA +/- (2% + 5cnts)

**Current Trip Limits:** 0.1μA to 9.999mA, 1μA Resolution

**Measuring Circuit:** 5 Types of Human Body Models in accordance with UL544 NP, UL544P, UL1563, UL2601-1, IEC60601-1, IEC 950, UL1950, UL3101 Stds.

**Measurement Modes:** Normal, Reverse and Single Fault

**Max. DUT Current:** 10A

### Common Features:

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

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

**Test Setups:** 99 Test Setups with 99 Steps each, Alpha-Numeric Label

**Rear Connectors:** Input: Binding Posts (Line & Neutral)  
Isolation Transformer (not included) required for proper operation (10A, 300V max.).  
Output: High Voltage sockets for connection to 115V corded adapter, G30 (included)

**Front Panel Lockout:** Password

**Safety Features:** Fast Cutoff (<0.4ms) and Fast Discharge  
Adjustable Discharge: 0.05-5.1kV DC

**Miscellaneous:** Fail Retest  
Scanner Delay: 0.1 to 99.9, 0.1s/step  
PAUSE Mode: Program pause between steps

**Indication:** Pass/fail lights, audible sound

**Buzzer Level:** 1,2,3 and Off

**Interface:** IEEE488 Standard, RS232 Optional

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

**Weight:** 53 lbs (24kg) - Net, 60 lbs (27kg) Shipping

**Environmental:** Operating: 0°C to + 40°C, Humidity: <75%  
Storage: - 20°C to + 70° C

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

## Ordering Information

Guardian 6200 Production Safety Analyzer	G30	Corded Product Adapter (115V)	G26	RS232 Interface
<b>Includes:</b>	G33	Power Entry Adapter Cable	G27	Rack Mount Flanges
Guardian 6000 Electrical Safety Analyzer	700070	AC Power Cable	G28	Printer Interface (replaces IEEE 488)
6000-04 Line Leakage Current Scan Unit	No P/N	Calibration Certificate Traceable to NIST	G31	Isolation Transformer (500VA)
150528 Instruction Manual	<b>Optional Accessories</b>		G32	Isolation Transformer (1000VA)
S02 HV Lead Set, 1m	No P/N	Calibration Data		
G15 Ground Continuity Lead Set	S05	Foot Switch		

For more detailed specifications, visit [www.quadtech.com](http://www.quadtech.com) • For information about special purchase, rent & lease options, call

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