



## Guardian 6100 Condensed Operating Instructions

These Condensed Operating Instructions are for illustrative purposes only. The Guardian 6100 Instruction Manual should be read in its entirety and all safety precautions adhered to. In this example perform a Ground Bond (GR) test followed by an AC Hipot (WAC) test and then an Earth Line Leakage Current (LC) test. A Ground Bond test is always performed first to insure good GND connection for safety. The Hipot test is second to insure the DUT is not shorted. Prior to connecting the device under test to the instrument, program the 3-Step test as follows: **GR test:**  $I=25A$ ,  $R_{HIGH}=100m\Omega$  and  $T_{TEST}=1.0s$ . **WAC test:**  $V=1250V$ ,  $I_{HIGH}=10mA$ ,  $I_{LOW}=0$ ,  $T_{TEST}=1.0s$ , and  $T_{RAMP}=1.0s$ . **LC test:** Device=D4 UL2601-1, Line=Normal,  $I_{HIGH}=500\mu A$ ,  $I_{LOW}=0\mu A$ , Power=Voltage,  $V_{HIGH}=0V$ ,  $V_{LOW}=0V$  and  $T_{TEST}=10.0s$ .

First, program the **Ground Bond (GR) Test:**

Press [PROG]

Select Step = 1  
1-10 (UP/DOWN)

Select Test STEP. Press UP or DOWN arrow to enter test step =1

Press [ENTER]

Select Mode = GR  
Press UP/DOWN

Select Test MODE. Press UP arrow to display GR

Press [ENTER]

Current = \_0.00A  
1 - 30A

Select CURRENT. Press [2] [5] [.] [0] to enter test current = 25A\*

Press [ENTER]

High Limit = 100.0m $\Omega$   
0.1 - 510m $\Omega$

Select HIGH Limit (m $\Omega$ ). Press [1] [0] [0] [.] [0] to enter High Limit = 100m $\Omega$  \*

Press [ENTER]

Low Limit = Disable  
0.1-510m $\Omega$  0 = Disable

Select LOW Limit (m $\Omega$ ). Press [0] to enter Low Limit = 0m $\Omega$  \*

Press [ENTER]

Test Time = \_10.0s  
0 -999s 0 = Disable

Select Test TIME (sec). Press [1] [.] [0] to enter Test Time = 1sec\*

Press [ENTER]

Select Step = 1  
1-10 (UP/DOWN)

**GR TEST SETUP IS COMPLETE.**

**Select Step = 2.**

**Continue now programming an AC hipot test.**

\* = example value. Substitute your own test parameters as desired.



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Secondly, program the **AC Hipot (WAC) Test**:

Press [ENTER]

Select Mode = WAC  
Press UP/DOWN

Select Test MODE. Press UP arrow to display WAC

Press [ENTER]

High = 1  
Scan Box - Channel 1

Select Scanner Disable\*. Press [1] to select 6000-04 Scanner.

Press [ENTER]

Voltage = 0.000kV  
0.05 - 5kV

Select VOLTAGE. Press [1] [.] [2] [5] to enter test voltage = 1.250kV \*

Press [ENTER]

High Limit = 0.500mA  
0.001 - 40mA

Select HIGH Limit (mA). Press [1] [0] [.] [0] to enter High Limit = 10mA \*

Press [ENTER]

Low Limit = Disable  
0-40mA 0 = Disable

Select LOW Limit (mA). Press [0] to enter Low Limit = Disable \*

Press [ENTER]

ARC Limit = Disable  
0-40mA 0 = Disable

Select ARC Limit (mA). Press [0] to enter Arc Limit = Disable \*

Press [ENTER]

Test Time = \_10.0s  
0 -999s 0 = Disable

Select TEST TIME (sec). Press [1] [.] [0] to enter Test Time = 1.0sec \*

Press [ENTER]

Ramp Time = Disable  
0 -999s 0 = Disable

Select RAMP TIME (sec). Press [1] [.] [0] to enter RampTime = 1.0sec \*

Press [ENTER]

Select Step = 2  
1-10 (UP/DOWN)

**AC Hipot TEST SETUP IS COMPLETE.**

**Select Step = 3.**

**Continue now programming an Earth Line Leakage test.**

\* = example value. Substitute your own test parameters as desired.



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Lastly, program the **Earth Line Leakage (LC) Test**:

Press [ENTER]

Select Mode = LC  
Press UP/DOWN

Select Test MODE. Press UP arrow to display LC

Press [ENTER]

Device = D1 UL2601-1  
Select by UP/DOWN

Select Device (Human Circuit Model or Standard#). Press UP arrow key to display model# = D4 UL2601-1

Press [ENTER]

Line = LO NORMAL  
Select by UP/DOWN

Select Line (Fault Simulation). Press UP arrow key to display line = Normal

Press [ENTER]

High Limit = 6.000mA  
0.001 - 9.999mA

Select HIGH Limit. Press [0] [.] [5] to enter high current limit = 0.500mA (500uA\*) (Display changes to uA)

Press [ENTER]

Low Limit = Disable  
0-9.999mA 0= Disable

Select LOW Limit. Press [0] to enter low current limit = 0mA

Press [ENTER]

POWER = VOLTAGE  
Select by UP/DOWN

Select Power (DUT Power Monitor) Press UP arrow key to display power mode = Voltage

Press [ENTER]

Voltage High = Disable  
0-2200VA 0= Disable

Select HIGH Limit (VA). Press [0] to enter High Voltage Limit = 0V (Disabled)\*

Press [ENTER]

Voltage Low = Disable  
0-2200VA 0= Disable

Select LOW Limit (VA). Press [0] to enter Low Voltage Limit = 0V\*

Press [ENTER]

Test Time = 3.0s  
0 -999s 0 = Disable

Select TEST TIME (sec). Press [1] [0] [.] [0] to enter Test Time = 10.0sec\*

Press [ENTER]

Select Step =3  
1-10 (UP/DOWN)

**Line Leakage TEST SETUP IS COMPLETE.**

**Press [PROG] to EXIT programming mode.**

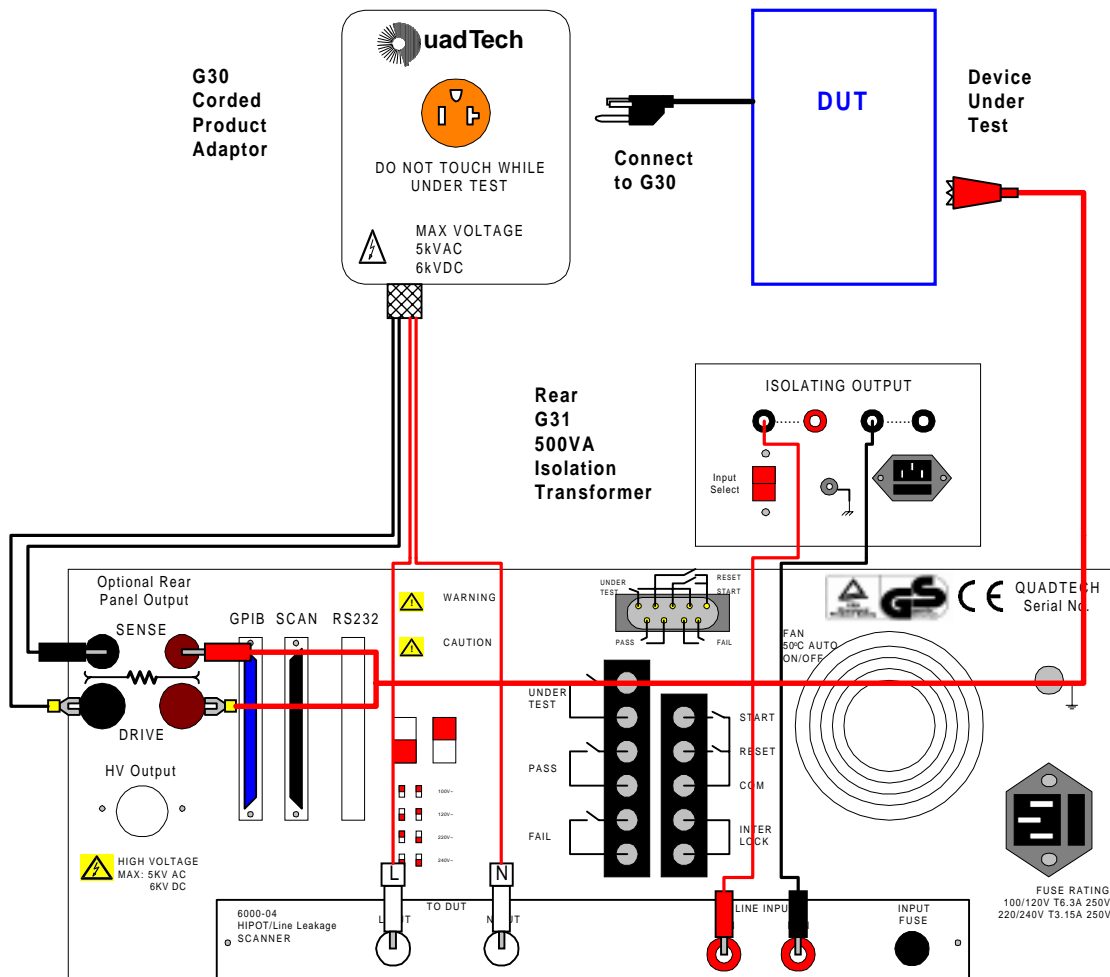
**Continue now by Connecting the device under test.**

\* = example value. Substitute your own test parameters as desired.

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### Connection to DUT:

Connect the device under test (DUT) to the 6100 instrument as illustrated in Figure 1. The black leads of the G30 Corded Product Adaptor are connected to the black 'Optional Rear Panel Output' Drive and Sense terminals. The red/white leads of the G30 are connected to the 6000-04 Line Leakage Scanner L-OUT and N-OUT terminals. The red G15 spade and banana leads are connected to the maroon 'Optional Rear Panel Output' Drive and Sense terminals. The red G15 alligator clip is connected to the case of the DUT. The G31 500VA (or G32 1000VA) Isolation Transformer is connected to the 6000-04 Line Input terminals. The DUT is then plugged into the G30 Corded Product Adaptor.



**G6100/6200 Rear Panel**

**Figure 1: Connection of Guardian 6100 to DUT**

### Initiate Test:



Hands away from DUT, all cables and instrument. Press **[START]**. Pressing **[STOP]** at any time will terminate the voltage output at the test terminals.

