

Sentry 10-35 AC/DC/IR Hipot Testers



Sentry Series Feature Checklist:

Sentry 10/15 AC Hipot Tester

- ❑ Programmable output voltage from 100V to 5000V in 10V steps
- ❑ 50 or 60Hz Test Frequency
- ❑ Leakage Current to 15mA AC
- ❑ Ground Continuity Check

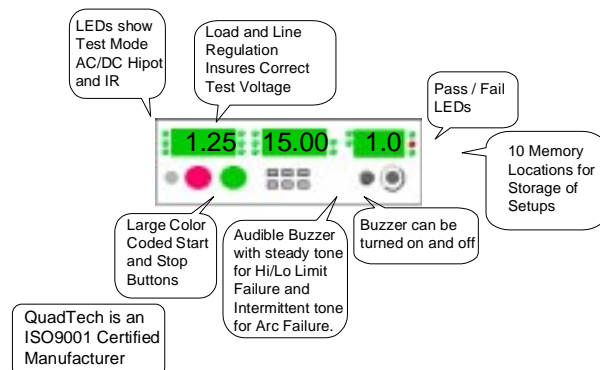
Sentry 20/25 AC/DC Hipot Tester

- ❑ All the Sentry 10/15 features, plus...
- ❑ Adds programmable DC Test Voltage form 100V to 6000V in 10V steps
- ❑ Leakage Current to 7.5mA DC (to 5mA for Sentry 25/35)

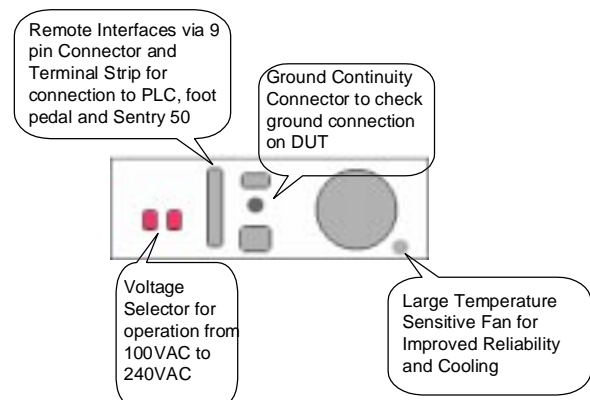
Sentry 30/35 AC/DC/IR Hipot Tester

- ❑ All the Sentry 20/25 features, plus...
- ❑ Adds Insulation Resistance measurement
- ❑ IR Measurement Range of 10MΩ to 10GΩ
- ❑ Programmable IR Test Voltage from 50V DC to 1000V DC in 10V steps

Front Panel Features



Rear Panel Features



Sentry Series Hipot Testers

The Sentry Series is a family of six economically priced hipot testers. All six are designed for use in both laboratory and production environments. The Sentry 15, 25 and 35 units are CE marked.

These instruments provide a high level of output voltage regulation: <1% +5V. Output voltage is regulated for both changes in line voltage and load. This guarantees the user is testing at the correct voltage.

Ground Continuity Check: When enabled this feature is designed to check that the resistance is less than 1 ohm between the ground blade of the product and any exposed metal on the case. The ground continuity socket is located on the back of the Sentry and a cable with alligator clip is supplied as standard. The cable is connected to any exposed metal, and the ground on the front of the Sentry is connected to the ground blade of the product. When the test is initiated, a constant current source is applied between the ground continuity socket and the ground terminal on the front. If the voltage developed is less than 0.1V (which equates to 1 ohm) the unit initiates a PASS and then performs any additional hipot or IR tests, otherwise a failure is indicated and test is terminated.

Adjustable Ramp and Hold Times: Both AC and DC test voltage can be ramped up over time from 0 to 99.9 seconds to protect sensitive devices from rapid changes in voltage. Test voltage can be applied to a device over a period of time from 0.1 to 999.9 seconds. The test voltage can also continuously be applied in manual mode by setting the hold time to “--”.

Adjustable minimum and maximum Current Trip Limits: Minimum and maximum trip currents can be set from 1mA to 15mA AC or 7.5mA DC. The maximum trip limit is always active. The minimum trip limit can be disabled. This gives the customer flexibility in the Sentry by indicating a PASS condition if the current is below the maximum trip and minimum trip is disabled, or indicating a PASS only if the current is within the range from the minimum to maximum trip limits.

*** Arc Detection:** This detects short duration current transients caused by arcing in the device under test as compared with the maximum and minimum current limits which monitor the steady state current flow. This detects transients with a duration of 10ms or greater. The sensitivity of the arc detection can also be adjusted from 1mA to the 15mA AC and 7.5mA DC.

Remote Control: Provides remote START, STOP and INTERLOCK inputs that are active low. Outputs indicating PASS, FAIL and UNDER TEST are via dry switch contacts that are closed if true.

Accessories: Comes standard with alligator clips. US corded product adapter, international corded product power strip, HV gun probe, high voltage probe, foot switch, power entry cable and longer test leads are available as options.

Calibration: All Sentry products are delivered with a calibration certificate traceable to NIST.

*** First Annual Calibration:** Sending the Sentry in for this calibration extends the warranty one additional year. Additional factory calibrations continue to extend the warranty.

*** 45 Day Money Back Guarantee:** No strings attached money back guarantee with NO RESTOCKING FEE.

*** Denotes:** Key features against competitive testers.

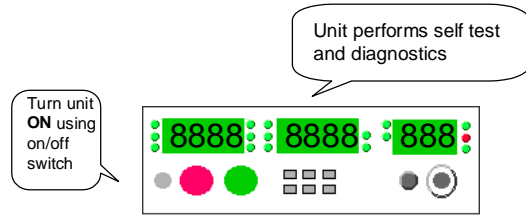
Demo Kit Includes

- Red HV Test Lead**
- Black Ground Test Lead**
- Power Cord**
- Sentry Series Instruction Manual**
- Calibration Certificate**

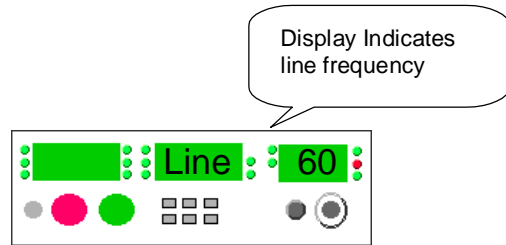
Before beginning any test, please be sure to have all the above accessories. Should you be missing anything, please contact the factory for toll-free assistance at **1-800-253-1230**.

Initializing a Sentry Hipot Tester

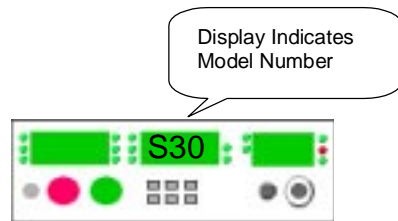
Screen 1



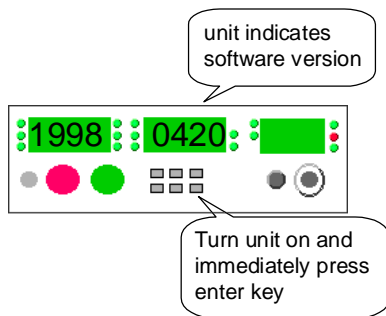
Screen 2



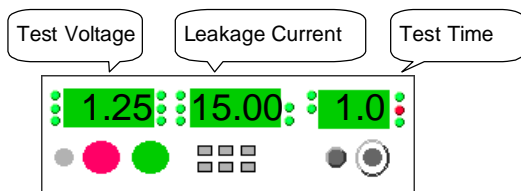
Screen 3



Screen 4



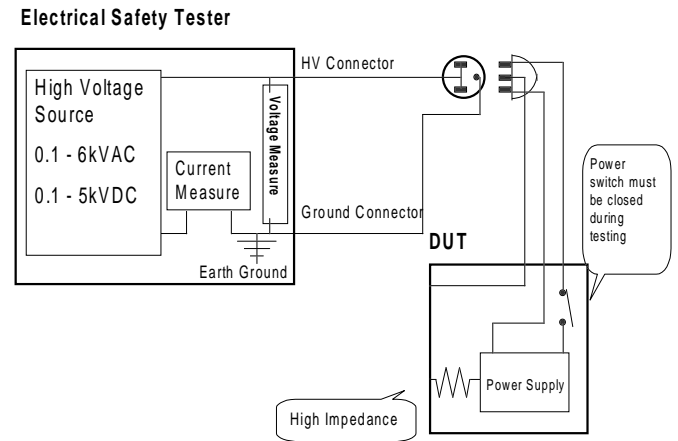
Typical Display



Performing an AC Hipot Test

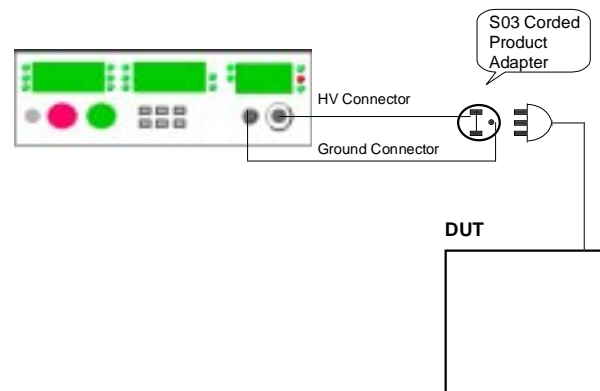
One of the most common electrical safety tests is the basic AC Hipot Test. The voltage is applied between the operating circuits and the chassis or ground. Refer to the figure below for the typical internal connection of an electrical safety tester.

Internal Hipot Connection:



Sentry Connection to DUT

The figure below illustrates the connection of the DUT to the Sentry Series instrument using the S03 Corded Product Adaptor.



Program an AC Hipot Test

This is one of the most common tests performed. The voltage is applied between the operating circuits and the chassis or ground.

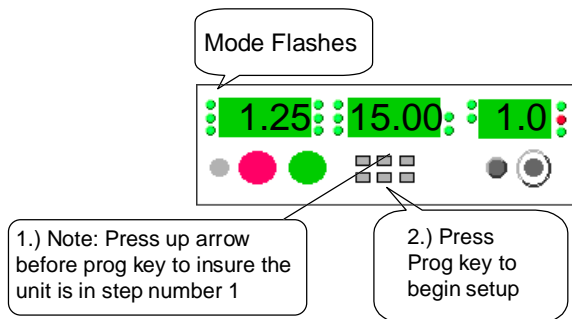
In this example, we will set up the G5000 to perform an AC hipot at 1250V AC. The voltage will ramp from 0V to 1250V in 1 second, hold the voltage for 1 second then indicate a PASS. The high current limit will be set to 10mA. If the leakage current exceeds 10mA at any time during the test, the G5000 will indicate a failure. The voltage and current are displayed until the STOP button is pressed.

Make sure the ground continuity feature is OFF by pressing [ENTER] [ENTER] [DOWN]. The display will show 'CONT Off' or 'CONT On'. Use UP or DOWN arrow until display shows 'CONT Off'. Press [ENTER].

Select Step 1.

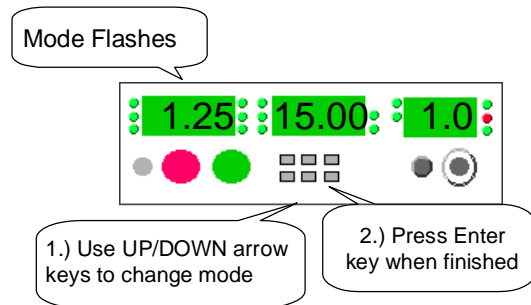
Press ↑ arrow to insure that the instrument is in Step 1.

Press [PROGRAM] to enter programming mode.



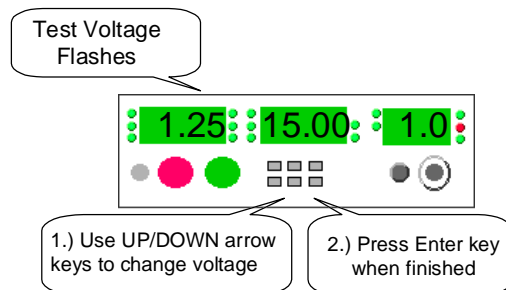
Press [ENTER].

Set MODE. Use ↑ ↓ buttons to select R-Ω. (Ground Bond Test)



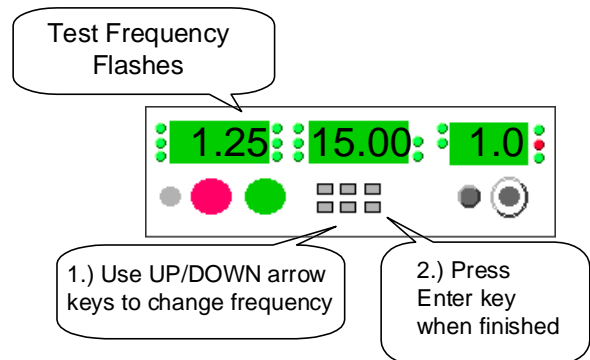
Press [ENTER].

Set Test Voltage. Use numeric keypad to set test voltage equal to 1.25kV.



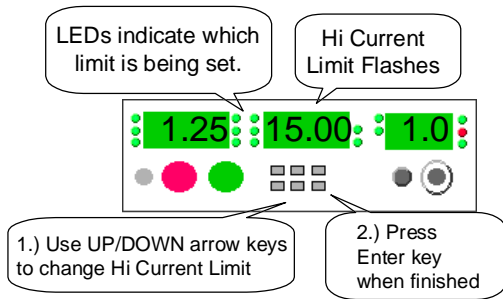
Press [ENTER].

Set Test Frequency. Use ↑ ↓ buttons to select 50Hz or 60Hz test frequency.



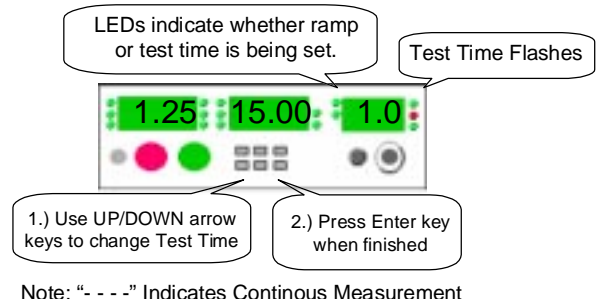
Press [ENTER].

Set HI Current Limit. Use ↑ ↓ buttons to set high current trip limit equal to 10mA.



Press [ENTER].

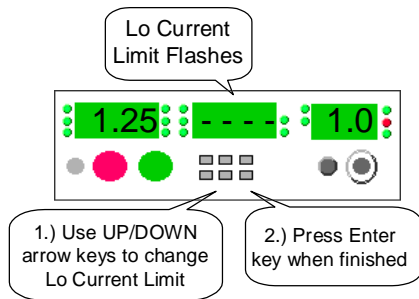
Set Test Time. Use ↑ ↓ buttons to set test time equal to 1 second.



Note: " - - - " Indicates Continuous Measurement

Press [ENTER].

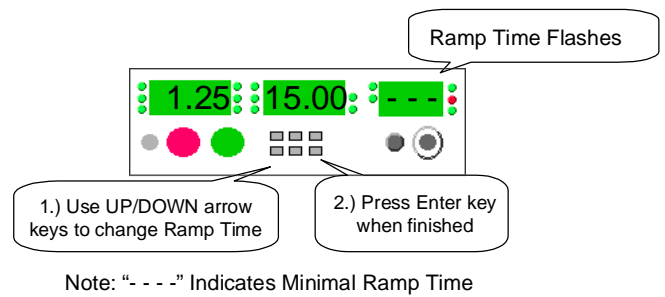
Set LO Current Limit. Use ↑ ↓ buttons to set low current trip limit equal to " - - - " (disabled).



Note: " - - - " Indicates Limit is Disabled

Press [ENTER].

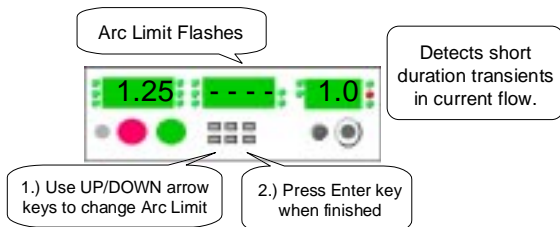
Set Ramp Time. Use ↑ ↓ buttons to set ramp time equal to 1 second.



Note: " - - - " Indicates Minimal Ramp Time

Press [ENTER].

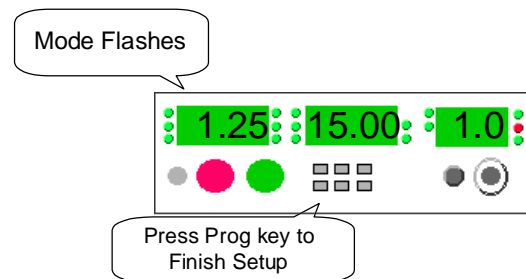
Set ARC Limit. Use ↑ ↓ buttons to set arc detection limit equal to " - - - " (disabled).



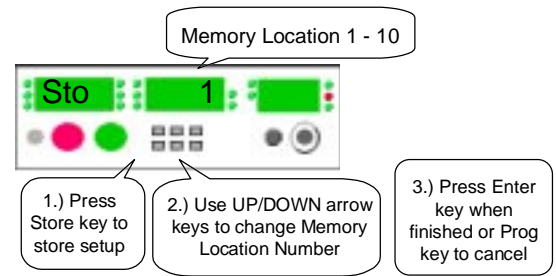
Note: " - - - " Indicates Limit is Disabled

Press [ENTER].

Press [PROGRAM] to exit programming mode.



Press [STORE] to STORE this test in memory. Use numeric keypad to enter location 10.



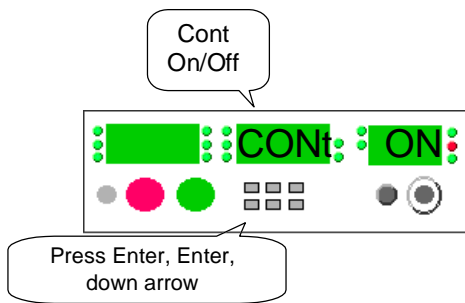
Press [ENTER].
(This basic hipot test is now stored in memory location 10).

Perform AC hipot test.
Make sure power switch on DUT is in the ON position.
Hands away from test cables and DUT.
Press [START] to initiate test.

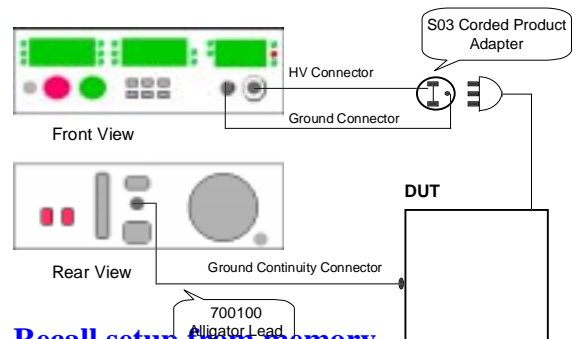
AC Hipot & Ground Continuity Test

In this test, the Sentry unit will check the continuity between the ground blade on the power cord and any exposed metal on the product (DUT).

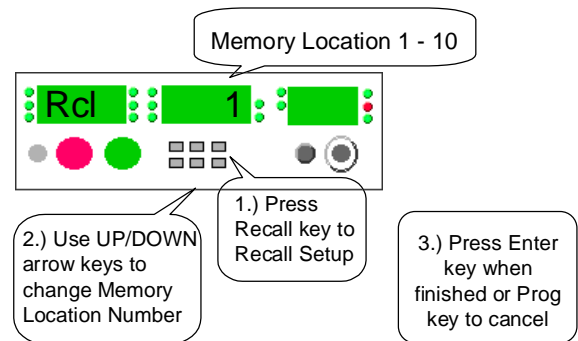
Insure that the Ground Continuity feature is ON by pressing [ENTER] [ENTER] [↓]. The display will show 'CONt Off' or 'CONt On'. Use the [↑] or [↓] arrow key to select 'CONt On'. Press [ENTER] to accept.



Connect the DUT as shown using the S03 Corded Product Adaptor for front panel connection and the Ground Continuity Connector for rear panel connection.



Recall setup from memory
Press [Recall]
Use ↑ ↓ buttons to select "10".
Press [ENTER].



Make sure power switch on DUT is in the ON position.
Hands away from test cables and DUT.
Press [START] to initiate test.

AC Hipot and Insulation Resistance Test

In this test we will perform two measurements, one right after the other. The first test will be the AC hipot with arc detection as performed in the first example. The second test in the sequence will be an insulation resistance test performed at 500V. The insulation resistance measured should be approximately 200MΩ.

Connect the High Voltage lead to the red terminal on the demo box that goes to resistor. Connect the Ground lead to the black terminal on the demo box.

Test Procedure:

Select Step 2.

Press [↓] to go to second step of test program.

(This insures the unit is in Step 2).

Note that "0.00" indicates step is disabled

This allows to tests to be performed one after the other. An example would be AC hipot followed by IR

1.) Note: Press **Down** arrow before prog key to get to step number 2. Then program as before. Note that you can only change step before pressing the prog key.

2.) Press Prog key to begin setup

Program the Sentry unit.

Press [PROG] to enter programming mode.

Mode Flashes

1.) Note: Press up arrow before prog key to insure the unit is in step number 2

2.) Press Prog key to begin setup

Set Mode

Press [↑] or [↓] to select mode = IR.

Press [ENTER].

Mode Flashes

1.) Use UP/DOWN arrow keys to change mode

2.) Press Enter key when finished

Set Test Voltage

Press [↑] or [↓] to set test voltage = 0.50kV

Press [ENTER].

Test VoltageFlashes

1.) Use UP/DOWN arrow keys to change voltage

2.) Press Enter key when finished

Set Low Resistance Limit

Press [↑] or [↓] to set low resistance limit = 10MΩ

Press [ENTER].

LEDs indicate which limit is being set.

Lo Resistance Limit Flashes

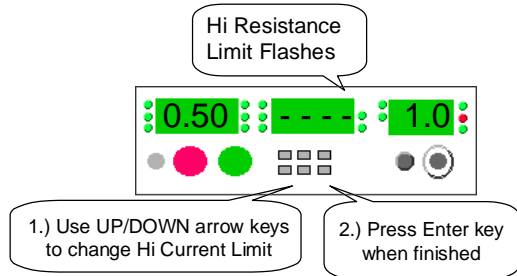
1.) Use UP/DOWN arrow keys to change Lo Current Limit

2.) Press Enter key when finished

Set High Resistance Limit

Press [↑] or [↓] to set high resistance limit = “---”

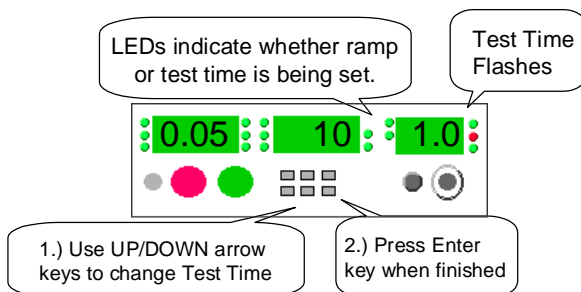
Press [ENTER].



Note: “- - -” Indicates Limit is Disabled

Set Test Time

Press [↑] or [↓] to set test time = 1.0 second
Press [ENTER].

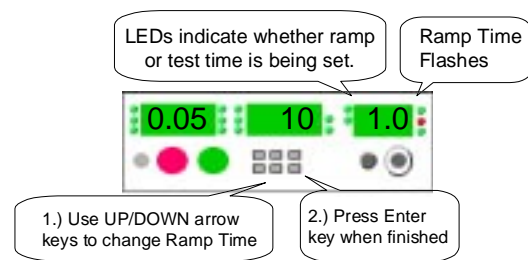


Note: “- - -” Indicates Continuous Measurement

Set Ramp Time

Press [↑] or [↓] to set ramp time = 1.0 second

Press [ENTER].



Note: “- - -” Indicates Minimal Ramp Time

Finish Setup

Press [PROG] to exit programming mode.

Store Setup in Memory

Press [STORE]

Press [↑] or [↓] to select location = 9

Press [ENTER].

(This stores the basic AC Hipot & IR test in memory location 9).

Perform Test

Make sure power switch on DUT is in the ON position.

Hands away from test cables and DUT.

Press [START] to initiate test.

QuadTech Products & Services

Other Products

QuadTech has a wide variety of hipot testers to fit your different application needs from basic hipot testers to multi-point scanning systems; LCR meters and Digibridges to impedance standards and decades. For more information on these products and accessories, please contact the factory at **1-800-253-1230** or visit our website at <http://www.quadtech.com>. Listed below are the accessories for the Sentry Series hipot testers.

Applications Assistance

We have Applications Engineers available to answer your testing questions through our toll-free number 1-800-253-1230 from 8:30am to 5:00pm Eastern Standard Time.

QuadTech Guarantee

In the U.S., all QuadTech products are covered by QuadTech's Lifetime Protection Policy. This plan includes an unconditional 45-day money back guarantee, toll-free hotlines for product and application support, and an extendible product warranty program.

Repair & Calibration Services

Products manufactured by QuadTech can be sent back to the factory for servicing. All calibration services are traceable to the National Institute of Standards and Technology (NIST). Call our Customer Care Center for more details on our different servicing programs available for your convenience.

Ordering Information

Sentry 10 AC Hipot Tester

Sentry 15 AC Hipot Tester

Sentry 20 AC/DC Hipot Tester

Sentry 25 AC/DC Hipot Tester

Sentry 30 AC/DC/IR Hipot Tester

Sentry 35 AC/DC/IR Hipot Tester

Includes:

150460 Instruction Manual
S02 HV Lead Set
G15 GC Lead Set
Calibration Certificate
AC Power Cable

Optional Accessories

Calibration Data
S02 HV Lead Set
S03 Corded Product Adaptor
S04 HV Lead Set (2m)
S05 Foot Switch
S06 High Voltage Probe
S07 Power Entry Adptr Cable
S08 Gun Probe

S09 HV Lead (1m unterm.)
S10 HV Lead (2m unterm.)
S11 Gun Probe w/ Remote Start
S12 Load Box, Std. Resistors
S14 Load Box, Custom Resistor
S16 Rack Mount Kit
S15 S50 Interconnection Cable
G16 International Power Strip
G25 Corded Product Adaptor

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