Sentry Plus Hipot Testers

Upgradeable AC/DC/IR Hipot Testers

USES:

- **Production Testing of Appliances, Instruments and Information Technology Equipment in accordance with UL, IEC, TÜV and Other Standards such as EN60335, EN60950, EN61010, CSA C22.2 No. 1010.1, UL3111 and UL1950**
- **Electric Motor Safety Testing**
- **Lighting Fixtures Safety Testing**

FEATURES:

- **Upgradeable: Add DC and/or IR**
- **Output Voltage: 5kVAC and 6kVDC**
- **Leakage Current: 20mAAC, 5mADC**
- **Resistance Measurements from 0.1MΩ to 50GΩ**
- **Programmable Ground Continuity from 0.1- 5Ω**
- **Programmable Ramp, Test & Fall Times**
- **Store/Recall: 60 Tests**
- **Ground Fault Interrupt (GFI)**
- **Fast Discharge of DUT & Fast HV Output Cutoff**
- **Monitor DC In-Rush Current**
- **EN 50191 3mA Current Limit**
- **Pause Mode**
- **Open/Short Circuit Detection Mode**
- **Remote I/O Interface**
- **Large Enhanced Graphical Display**
- **Front & Rear Output Connectors**

Introduction

The Sentry Plus instruments provide a complete dielectric testing solution. The Sentry 10 Plus for AC Hipot testing, the Sentry 20 Plus for AC/DC Hipot testing and the Sentry 30 Plus for AC/DC Hipot tests plus IR measurements. The large enhanced digital display and user friendly controls of the Sentry Plus instrument allow test parameters and limits to be easily programmed and viewed.

Description

The Sentry Plus Series units are advanced digital hipots with load and line regulation to ensure measurement integrity. Multistep capability allows the user to perform multiple tests in a sequence with the push of one button.

The Sentry 10 Plus AC Hipot Tester performs AC dielectric withstand (hipot) tests. The test voltage is programmable from 50V to 5kV AC with a resolution of 1V. The current range is 1μA to 20mA.

The Sentry 20 Plus AC/DC Hipot Tester has all the features of the Sentry 10 Plus in addition to DC hipot capability. The test voltage is programmable from 50V to 6kV DC with a resolution of 1V. The current range is 0.1μA to 5mA.

The Sentry 30 Plus AC/DC/IR Hipot Tester has all of the features of the Sentry 20 Plus in addition to Insulation Resistance (IR) testing. The IR measurement range is from 0.1MΩ to 50GΩ with test voltages from 50 to 1000VDC.

Program & Display Ground Continuity: The Sentry Plus Series can measure and display the resistance between the ground blade of the power cord and any exposed metal on the product.

Upgradeable: With the Sentry Plus Series, it is possible to add DC and/or IR test capability without purchasing a new instrument. The Sentry 10 Plus can be upgraded to a Sentry 20 or 30 Plus and the Sentry 20 Plus can be upgraded to a Sentry 30 Plus.

Meets UL Hipot Tester Requirements: The Sentry Plus instruments measure & display the output voltage directly at the output terminals. The instruments have both visual and audible failure indications, and after a failure the STOP switch must be pressed prior to another measurement.

Open/Short Circuit Mode: All Sentry Plus models have OS mode to detect connection of the device in order to prevent false readings. Open ensures the device under test is connected properly and Short ensures the device is not shorted prior to applying the high voltage. The Open value is programmable from 10-100% and the Short value from 100-500%.

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Product Specifications

Sentry 10, 20 & 30 Plus

AC Output Voltage: Range: 50V to 5000V AC
Resolution: 1Volt/step
Frequency: 50/60 Hz selectable
Waveform: Sinusoidal
Regulation: ±(1% of setting +5V)

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

AC Current Display: Range: 0.001mA to 20mA AC
Resolution: 1µA
Accuracy: ±(1.5% of reading + 5cnt)

High/Low Limit Test: Range: 0.001mA to 20mA AC
Low limit can be turned OFF

Sentry 20 & 30 Plus

DC Output Voltage: Range: 50V to 6000V DC
Resolution: 1Volt/step
Regulation: ±(1% of setting +5V)

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

DC Current Display: Range: 0.0001mA to 5mA DC
Resolution: 0.1µA
Accuracy: ±(1.5% of reading + 5cnt)

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

Charging Current: 5mA max

In-Rush Current: Monitors: 0.5µA - 5mA, OFF

Sentry 30 Plus

Insulation Resistance: Range: 0.1MΩ - 50GΩ
0.1M - 1G: ± (10% + 5 cts), <100V
0.1M - 1G: ± (7% + 5 cts), <500V
1M - 1G: ± (4% + 5 cts), ≥500V
1G - 10G: ± (7% + 5 cts), ≥500V
10G - 50G: ± (12% + 5 cts), ≥500V

IR Output Voltage: Range: 50V to 1000V DC
Accuracy: ±(1% of setting +5V)

High/Low Limit Test: 0.1MΩ - 50GΩ
High limit can be turned OFF

Common Features

Open/Short Circuit: Voltage <100V; Frequency: 600Hz
Open: 10-100%; Short: 100-500%

Common Features

Ground Continuity: Programmable: 0.1Ω - 5Ω, ±0.2Ω
Current: 0.1A or OFF

Arc Detection: Arc Level: adjustable OFF or
1mA - 20mA AC & 5mA DC
Arc Duration: > 10µs

Indication: Pass/fail lights, audible sound

Time: Ramp: 0.1 to 999s (±20ms), OFF
Dwell: 0.1 to 999s (±20ms), (DC & IR)
Test*: 0.1 to 999s (±20ms), Continuous
Fall: 0.1 to 999s (±20ms), OFF
*Test Time ≤60seconds when VI=100VA
*Test Time for IR: 0.3 t0 999s (±20ms)

Fast Discharge: <0.2s Typical Voltage Discharge across DUT back through the HV transformer

Fast Cutoff: <0.4ms Typical Cutoff of Voltage on FAIL and when STOP is pressed

Ground Fault Interrupt: Automatic instrument shutdown for current imbalance >0.5mA ± 0.25mA

EN 50190 Limit: 3mA AC, 5mA DC or OFF

Standard Interface: Inputs: Start, Stop and Interlock
Characteristics: 24V Active Low,
Pulse Width ≥20ms.
Outputs: Pass/Fail/Under Test
Characteristics: Dry Contact relay
Ele. Characteristics: 115V <300mA
Logic: Closed if True
Connector: 9 pin Male D-Series

Test Setups: 60 Memory Locations/10 Steps

Connectors: Front & Rear Connectors (HV and RTN)
HV OUTPUT (Custom Banana)
RTN/LOW (Binding Post)
GC (Binding Post, Rear Only)

Front Panel Lockout: Key press with or without memory recall

Miscellaneous: Zero Offset

Dimensions: (w x h x d):10.8 x 4.0 x 14.0 inches
(270 x 100 x 350 mm)

Weight: **Net:** 26.0 lbs (12kg)
Ship: 28.0 lbs (13kg)

Environmental: Meets MIL-T-28800E, Type 3, Class 5
Operating: 0°C to + 40°C
Humidity: <80%
Storage: - 10°C to + 60°C

Power: •90 - 132V AC •50 or 60Hz
•198 - 250V AC •300W max

Ordering Information

Sentry 10 Plus AC Hipot Tester
Sentry 20 Plus AC/DC Hipot Tester
Sentry 30 Plus AC/DC/IR Hipot Tester

Includes:
150697 Instruction Manual
700070 Power Cable
S02 Test Leads
700100 Ground Continuity Lead
Calibration Certificate Traceable to NIST

Optional Accessories:
Calibration Data
S02 HV Lead Set, 1m, (std with unit)
S03 Corded Product Adapter (115V)
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
S12 Load Box, resistive
S14 Load Box, custom resistors
S15 Interconnection Cable to S50
G16 International Power Strip
G25 Corded Product Adapter (240V)

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