

Microprocessor-Controlled Digital **Hipot & Ground Bond Testers**

For Production Line Safety Compliance Testing



Safety Agency Listed.

USER SAFETY:

- Safety Agency Listings
- No Load Setup
- Front Panel Calibration

RELIABILITY:

- Tamper Proof Front Panel Controls
- Low Current Sense
- Line and Load Regulation

EASE OF USE:

- Liquid Crystal Display
- Test Setup Memories
- Electronic Ramp & Dwell Settings

ENHANCED TECHNOLOGY:

- Ground Continuity Check
- Insulation Resistance Test Mode
- Remote Control and Signal Output

Slaughter
Instruments for Electrical
Test & Measurement

Slaughter

Slaughter, a leader and pioneer in Electrical Safety testing for over 45 years, now offers a new enhanced line of electrical safety testing instruments. Incorporating the latest technology and safety features, these instruments provide you with high performance at a great value. Our enhanced line includes the 2900 Series of Hipot testers and their companion Ground Bond tester, Model 2630.

The UL listed 2900 Series of Hipot testers consist of three models, all of which were designed to provide safe, reliable, and cost-effective electrical safety testing. The 2900 series will comply with agency requirements from such agencies as UL, TÜV, CSA, VDE, and IEC. Models include the 2925, AC Hipot tester, the 2935, AC/DC Hipot tester and the 2945, AC/DC Hipot and built-in Insulation Resistance tester.

The 2630 is an enhanced Ground Bond tester that is a companion instrument to the 2900 series. It includes the same safety, reliability and technology as the 2900 series.

Whether used with the 2900 series as a system or as a stand alone instrument, the 2630 is equipped with the technology and features which make it a perfect choice for production line safety testing. Slaughter delivers price/performance Electrical Safety testing like no one else in the industry.



2900 Series Features & Benefits

FEATURE

BENEFIT

Low Current Sense

Monitors the maximum level of current flow, thus ensuring that the device under test (DUT) is properly connected and that the hipot test is being performed.

Safety Agency Listed

These Electrical Safety testers are safety agency listed. All models carry the C-UL-US, TÜV and CE safety agency marks. This means that the 2900 Series has passed the strict design and performance tests as called out in EN 61010, IEC 1010, and UL 3111 safety agency standards.

Liquid Crystal Display

The Liquid Crystal Display allows the user to clearly monitor the test parameters as well as the test results.

Test Setup Memories

The operator can store and recall test setups, thus eliminating the need to reprogram. The 2900 series contains five memory locations.

Electronic Ramp and Dwell

The electronic ramp and dwell control helps keep test results consistent by ensuring that the test duration is the same for each product tested.

Line and Load Regulation

This system maintains the output voltage to within 1% of settings from no load to full load and over the complete line voltage range to ensure that the test results remain consistent and within safety agency requirements.

No Load Setup

This provides the operator with an easy and safe way to set trip currents and output voltages since parameters are set without activating the high voltage.

PLC Remote Control

A standard 9-pin interface provides outputs for Pass, Fail, Reset Out, Start Out and Test in Process. A second 9-pin interface provides inputs for Test, Reset and Withstand Processing. This gives the user all the basic remotes required to configure these instruments through simple PLC relay control.

2630 Series Features & Benefits

FEATURE

BENEFIT

Safety Agency Listed

The 2630, like the 2900 Series, is also safety agency listed. It carries the same C-UL-US, TÜV and CE safety agency marks.

Milliohm Offset Capability

This feature minimizes the effect of test lead resistance or resistance of test fixturing. The milliohm offset function allows the resistance of longer test leads and test fixtures to be subtracted from the test results.

Adjustable Output Current and Milliohm Trip Currents

This capability makes the 2630 versatile enough to meet all safety agency specifications for Ground Bond test requirements.

User Selectable Output Frequencies of 50 or 60 Hertz

The 2630 fits all applications. This feature makes it simple for the user to select the output frequency so that products can be tested at the same frequency at which they will be used.

Test Indicator

An LED located directly over the high current terminal clearly indicates when high current is active to provide maximum operator safety.

DIELECTRIC WITHSTAND TEST MODE	
INPUT VOLTAGE	115/230V selectable, $\pm 15\%$ variation 47 - 63Hz
FUSE	115VAC, 230VAC – 3.15A fast acting 250VAC
OUTPUT	Rating: AC 0 - 5000V, 2V/step, 12mA DC 0 - 6000V, 2V/step, 5mA DC mode on 2935 and 2945 only Regulation: $\pm (1\% \text{ of output} + 5V)$
VOLTAGE SETTING	0V - Max output rating, 10 volt step Accuracy: $\pm (2\% \text{ of Setting} + 5V)$ (relative to displayed output) Can be adjusted during operation via UP and DOWN arrow keys.
OUTPUT FREQUENCY	2925: 50/60Hz selectable 2935 & 2945: DC and 50/60Hz selectable
WAVE FORM	Sinewave Distortion : $< 2\% \text{ THD}$
RIPPLE	$< 5\%$ at 6KVDC/5mA (2935 & 2945 only)
DWELL TIME SETTING	0 & 0.2 - 999.9 seconds, 0.1 second/step "0" for continuous running
RAMP TIME SETTING	0 & 0.2 - 999.9 seconds, 0.1 second/step 0 ramp setting = 0.1 seconds fixed ramp
FAILURE SETTINGS	AC mode High limit: 0.10 - 12.00mA, 0.01mA/step Low limit: 0.00, 0.10 - 12.00mA, 0.01mA/step (0 = OFF) Accuracy: $\pm (2\% \text{ of setting} + 0.02\text{mA})$ DC mode High limit: 0.02 - 5.00mA, 0.01mA/step Low limit: 0.00, 0.02 - 5.00mA, 0.01mA/step (0 = OFF) Accuracy: $\pm (2\% \text{ of setting} + 0.02\text{mA})$
METERING	Voltmeter (4 digits) Range: AC 0.00 - 5.00KV DC 0.00 - 6.00KV Resolution: .01KV Accuracy: $\pm (2\% \text{ of reading} + 10V)$ Ammeter (4 digits) Range: AC 0.10 - 12.00mA DC 0.02 - 5.00mA Resolution: 0.01mA Accuracy: $\pm (2\% \text{ of reading} + 0.02\text{mA})$
TIMER DISPLAY	Range: 0.0 - 999.9 seconds Resolution: 0.1 second Accuracy: $\pm (0.1\% \text{ of reading} + 0.05 \text{ seconds})$
DISCHARGE TIME	$\leq 300\text{ms}$ The max. capacitive load vs. output voltage: 0.20 μF - $< 1\text{KV}$ 0.050 μF - $< 4\text{KV}$ 0.10 μF - $< 2\text{KV}$ 0.040 μF - $< 5\text{KV}$ 0.06 μF - $< 3\text{KV}$ 0.015 μF - $< 6\text{KV}$
GROUND CONTINUITY CHECK	Current: DC 0.1A $\pm 0.01\text{A}$, fixed Maximum ground resistance: $1\Omega \pm 0.1\Omega$, fixed

INSULATION RESISTANCE TEST MODE	
OUTPUT VOLTAGE	Range: 100 - 1000 Volts DC Resolution: 10 volt/step Accuracy: $\pm (2\% \text{ of reading} + 5 \text{ volts})$
VOLTAGE DISPLAY	Range: 0 - 1000V Resolution: 10 volt/step Accuracy: $\pm (2\% \text{ of reading} + 2 \text{ counts})$
RESISTANCE DISPLAY	Range: 1 - 1000M Ω (4 Digit, Auto Ranging) Resolution: 500VDC 1000VDC M Ω M Ω M Ω 0.0 1.00 - 40.00 1.00 - 80.00 0.1 35.0 - 999.9 75.0 - 999.9 Accuracy: $\pm (3\% \text{ of reading} + 2 \text{ counts})$ at test voltage $> 500\text{V}$ $\pm (7\% \text{ of reading} + 2 \text{ counts})$ at test voltage = 500V
HIGH RESISTANCE LIMIT	Range: 0 - 1000M Ω (0 = Off)
LOW RESISTANCE LIMIT	Range: 1 - 1000 M Ω
DELAY TIMER	Range: 0, 0.5 - 999.9 sec (0 = Constant) Resolution: 0.1 sec/step Accuracy: $\pm (0.1\% + 0.05 \text{ sec})$

GENERAL	
REMOTE CONTROL & SIGNAL OUTPUT PROGRAM	The following input and output signals are provided through the 9 pin D type connector; 1. Remote control: Test and Reset 2. Outputs: Pass, Fail and Test in Process
MEMORY	5 Memories
SECURITY	Key Lock capability to avoid unauthorized access to all test parameters. Memory Lock capability to avoid unauthorized access to memory locations.
LINE CORD	Detachable 7 ft. (2.13m) power cable terminated in a three prong grounding plug.
TERMINATIONS	6ft. (1.83m) high voltage probe and 6 ft. high voltage lead. 6ft continuity lead with clip and 6ft return lead with clip.
MECHANICAL	Tilt up front feet. Dimensions: (W x H x D) 11 x 3.5 x 14.56 in. (280 x 89 x 370 mm) Weight: 20 lbs. (9Kgs)
ENVIRONMENTAL	Operating Temperature: 32° - 113°F (0° - 45°C) Relative Humidity - 0 to 95%
CALIBRATION	Traceable to National Institute of Standards and Technology (NIST). Calibration controlled by software. Adjustments are made through front panel keypad in a restricted access calibration mode. Calibration information stored in non-volatile memory.

Model 2630 Ground Bond Tester



DESCRIPTIONS	
INPUT VOLTAGE	115/230V selectable, $\pm 15\%$ variation 47 - 63Hz
FUSE	6.3A slow blow 250VAC
OUTPUT	Current: AC 3 - 30Amps, 0.1 Amp/step Regulation: $\pm (2\% \text{ of Setting} + 0.02A)$ Voltage: AC 6 Volts fixed
OUTPUT FREQUENCY	50/60Hz selectable
DWELL TIME SETTING	0 and 0.5 - 999.9 seconds, 0.1 second/step 0 for continuous running Accuracy: $\pm (0.1\% \text{ of Setting} + 0.05 \text{ seconds})$
FAILURE SETTINGS	High limit: 0 - 120m Ω for 10 - 30 Amps, 1mA/step 0 - 510m Ω for 10 Amps, 1mA/step Accuracy: $\pm (2\% \text{ of setting} + 2m\Omega)$
MILLIOHM OFFSET	Max. Offset Capability: 100m Ω , 1mA/step Accuracy: $\pm (2\% \text{ of setting} + 2m\Omega)$
METERING	Ammeter (3 digits) Range: 0 - 30 Amps Resolution: 0.1 Amp/step Accuracy: $\pm (3\% \text{ of Reading} + 0.03A)$ Ohmmeter (3 digits) Range: 0 - 510m Ω Resolution: 1 m Ω /step Accuracy: $\pm (2\% \text{ of Reading} + 2m\Omega)$ Timer (4 digits) Range: 0 - 999.9 seconds Resolution: 0.1 seconds/step Accuracy: $\pm (0.1\% \text{ of Reading} + 0.05 \text{ seconds})$

GENERAL	
REMOTE CONTROL & SIGNAL OUTPUT PROGRAM	The following input and output signals are provided through two 9 pin D type connectors; 1. Remote control: Test, Reset and Withstand Processing 2. Outputs: Pass, Fail, Test in Process, Start Out, and Reset Out
SECURITY	Key Lock capability to avoid unauthorized access to all test parameters. Memory Lock capability to avoid unauthorized access to memory locations.
LINE CORD	Detachable 7 ft. (2.13m) power cable terminated in a three prong grounding plug.
TERMINATIONS	6ft. (1.83m) high current and return leads with clips.
MECHANICAL	Bench style with tilt up front feet. Dimensions: (W x H x D) 11 x 3.5 x 14.56 in. (280 x 89 x 370 mm) Weight: 20 lbs. (9Kgs)
ENVIRONMENTAL	Operating Temperature: 32° - 113°F (0° - 45°C) Relative Humidity - 0 to 95%
CALIBRATION	Traceable to National Institute of Standards and Technology (NIST). Calibration controlled by software. Adjustments are made through front panel keypad in a restricted access calibration mode. Calibration information stored in non-volatile memory.
PROGRAM MEMORY	5 memories

Interconnection Capability



All models in the 2900 series can be interconnected to the 2630 to form a complete entry level system, which will perform the most commonly specified electrical safety tests including AC and DC Dielectric Withstand, Insulation Resistance and Ground Bond in a single Device Under Test (DUT) connection. The system is a cost-effective way to test to safety agency standards that require high voltage test of insulation and high current tests of the protective ground circuit.

Visit us at www.hipot.com or call us at 1-800-504-0055

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