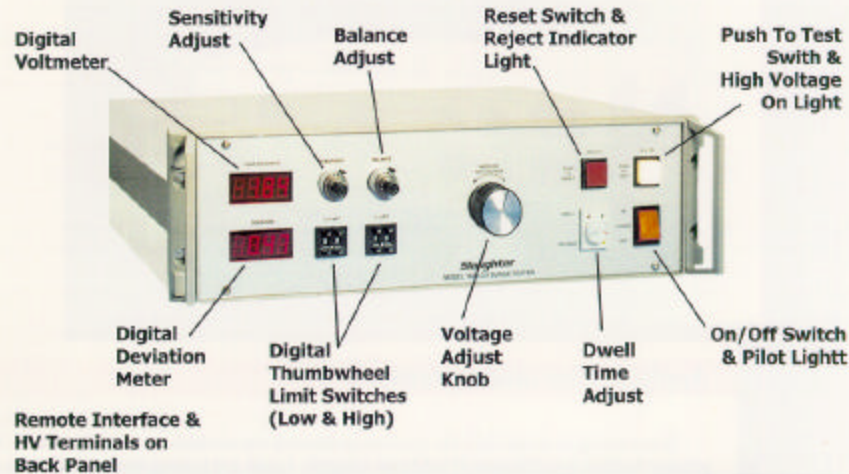


**MODEL 1649****Surge Tester****Instrument Specifications**

Voltage Rating	Variable to 3,000 VDC Peak
Digital Display	3.5 Digits (Voltage x.xx)
Discharge Capacitance	0.05 MFD
Pulse Energy	Variable to 0.225 Watt-Seconds
Minimum Recommended Load Impedance	20 Ohms/KV
Repetition Rate	Line Frequency
Dwell Time Range	Variable to 5-seconds
Dimensions	19" W x 5.25" H x 17.5" D
Approximate Weight	44 Pounds
Input Power Required	120 VAC, 50 or 60 Hz

For additional information and product specifications please contact us:



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# MODEL 1649

## Surge Tester



## Applications and Operation

### Applications

Repetitive Production

Inspection

### Tests

Solenoids

Chokes

Transformers

Stators

### Benefits

Operator Safety

Ease of Use

Repeatability

Reliability

Surge testing is undoubtedly the most comprehensive test available for wound products. Its primary function is verification of insulation integrity. Latent and existing insulation failures such as turn-to-turn short, layer-to-layer shorts, coil-to-coil shorts, winding-to-winding shorts, and phase-to-phase shorts are best detected by surge testing. Open circuit and ground detection are secondary benefits of surge testing. The verification of insulation integrity of simple coils, chokes, solenoids, transformers, stators, field coils and other wound products makes the surge test a "must" for the quality conscious manufacturer.

The Series 1649 Surge tester is *Masterless* as it requires no active-master for analysis. Instead, reference settings are determined based upon initial setup with a "good" workpiece and then simply repeated when needed. All test results are go/no-go and do not require operator interpretation or judgment.

The Series 1649 Surge tester operates as a capacitive-discharge system. A capacitor is charged with high voltage on the first half of a sine wave and then discharged or dumped into the workpiece, through an SCR, on the second half of the sine wave. This sequence continues throughout the dwell time thus stressing the insulation of the workpiece with high voltage DC pulses.

Because the workpiece is characteristically inductive it will automatically respond to the Surge tester's pulsed excitation by generating a counter-electromotive force or flyback action, which produces a ring wave of diminishing proportions. The criteria for workpiece acceptance is based upon the integrated value of this self generated ring-wave.

During the surge test, the workpiece can be subjected to high instantaneous voltages and currents. However, the average power dissipated by the workpiece is relatively low thus avoiding damage to good parts.

- Digital display of voltage and deviation with digital limit selection.
- Unique go, no-go operation with automatic reject.
- Tests solenoids, chokes, transformers, stators and other wound products.
- Exposes shorted turns as well as opens and grounds.
- Masterless operation, does not depend on operation judgment.
- SCR high voltage switching and solid state control circuitry.

**Slaughter**  
Instruments & Systems for  
Electrical Test & Measurement