

# MODEL IT-25B

## Impulse Spark Tester

- >> Phase discriminating fault detection
- >> Regulated output voltage
- >> Reliable solid state design
- >> Accurate, true peak metering
- >> Meets MIL-C-13777E, MIL-W-16878D, NEMA specifications
- >> Process control output



IT-25B

The IT-25B Impulse Spark Tester is designed to comply with the rigorous test requirements of Military Specifications MIL-C-13777E, MIL-W-16878, and NEMA Standards for hook-up wire used in high temperature wire applications. This method is favored as an alternate to a wet dielectric test.

This unit produces a repetitive fast-rise negative voltage pulse, followed by an exponentially damped sinusoid having a frequency of several kilohertz. The electrode voltage is regulated against line voltage and load current changes. A repetition rate of 250 I.P.S. allows two test pulses in a 2 inch electrode at a wire speed of 1250 ft./min. Higher speeds may be attained by using a longer electrode when specifications permit.

### Description of Operation

An internal 250 I.P.S. oscillator triggers a silicon controlled rectifier, discharging a capaci-

tor into the primary winding of a high voltage transformer. The D.C. input to the SCR is regulated in accordance with the peak impulse voltage generated in a tertiary transformer winding. A phase-discriminating filter separates capacitive and resistive electrode currents. When the resistive component exceeds a predetermined value. A fault is registered in a direct coupled pulse stretching circuit which operates a fault counter and a latching relay. The phase splitting feature allows for wire whip and vibration while retaining the high sensitivity necessary to insure the detection of low current arc faults. Process control output is provided for the operation of machinery or an external alarm.

Care has been taken to insure reliability with the use of solid state circuits and a specially designed high voltage transformer. Near-unity coupling in the high voltage transformer permits precise metering of peak voltages.



Front Panel



BD-E12I Bead Chain Electrode

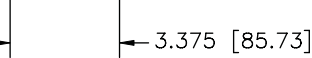
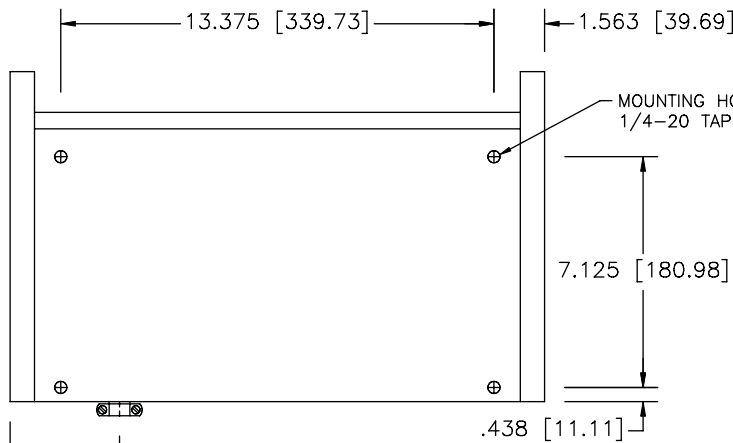
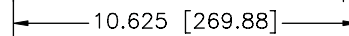
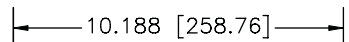
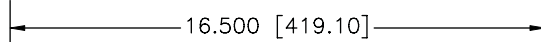
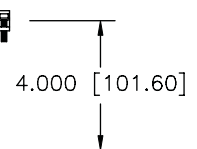
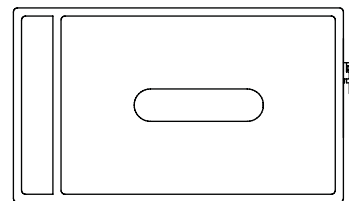
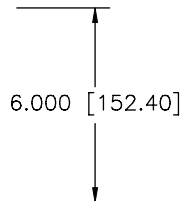
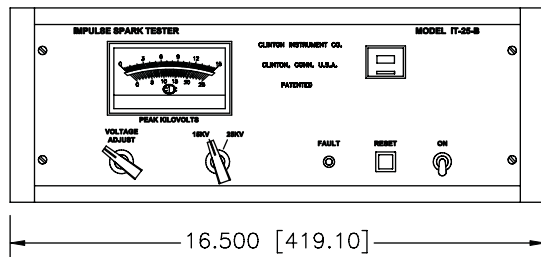
**Clinton**  
INSTRUMENT COMPANY

# IT-25B

## SPECIFICATIONS


Test Voltages..... 3-15KV, 5-25KV (negative peak volts).  
 Regulation: Line .....  $\pm 1\%$  for line voltage 105-135V with 25 pf load.  
                   Load ..... Less than 500V decrease from 25 pf to 50 pf load.  
 Voltage Metering ..... 0-15 KV, 0-25 KV peak,  $\pm 3\%$  FSD (true negative peak indication).  
 Impulse Wave Form..... Negative pulse with an exponentially damped sinusoid.  
 Rise Time..... (10% to 90%)  $10 \pm 2$  microseconds.  
 Positive Overshoot..... Less than 80% of initial negative amplitude.  
 Impulse Repetition Rate ..... 250  $\pm 0/-2\%$  I.P.S.  
 Sensitivity..... Resistance connected from electrode to ground required to register a fault; 500 kilohms, min.

Repetitive Fault Counting Rate .... 20 per second maximum.  
 Fault Indication ..... 3 digit counter with manual reset.  
 Process Control Output ..... Form C relay contacts 5 amperes.  
 Power Requirements ..... 120VAC 50/60HZ, 240 Volts, optional.  
 Electrodes ..... BD-E12I, BD-E13I, BD-E14I.  
 Dimensions: Cabinet ..... 16 1/2" L x 6" H x 10 1/4" D (419 x 152 x 250 mm).  
                   Electrode ..... 11" L x 6 1/4" H x 6 1/4" D (279 x 159 x 159 mm).  
 Weight: Cabinet..... 18.5 lbs. (8.5 kgs.)  
                   Electrode ..... 8 lbs. (3.6 kgs.)



MOUNTING HOLES  
1/4"-20 TAPPED (4 PLACES)

DIMENSIONS IN INCHES AND (MILLIMETERS)

the clinton instrument company  295 EAST MAIN STREET, CLINTON, CT 06413 PHONE: (860) 669-7548 FAX: (860) 669-3825	THIS DRAWING IS THE PROPERTY OF THE CLINTON INSTRUMENT COMPANY, INC. THE INFORMATION CONTAINED HEREON MAY NOT BE REPRODUCED OR DISTRIBUTED WITHOUT THE EXPRESS PERMISSION OF THE CLINTON INSTRUMENT CO.	TITLE: OUTLINE DIMENSIONS		
		DATE: 08-14-01	USED IN: IT-25B	DWG. No: IT-25B
		DRAWN BY: TPL	APPROVED BY: NULL	

