

Engineering Specification
SURGE SUPPRESSOR TESTER
MODEL SST 450

1. The tester shall measure the parameters needed to assess the capabilities of the widest possible range of transient voltage suppressor types.
2. The tester shall be lightweight, portable and battery-operated, using two commonly available 9V alkaline batteries.
 - 2.1. The tester shall weigh less than 2 lbs.
 - 2.2. The tester shall be housed in a handheld carrying case.
 - 2.3. The tester shall include a 16 characters by 2 lines LCD display.
 - 2.4. The battery level shall be reported on the display.
 - 2.5. The tester shall perform a self-test during power-up.
3. The tester shall be able to test the following suppressor types:
 - Metal-oxide varistors
 - Gas-discharge tubes
 - Silicon avalanche diodes
 - Thyristor surge-protective devices
 - 3.1. The tester shall be able to test suppressors with a filtering capacitor up to 200 microfarad.
 - 3.2. The tester shall be able to detect at a capacitive load greater than 10 microfarad.
 - 3.3. The tester shall be able to perform up to 5000 tests with fully charged batteries.
4. The tester shall have an open-circuit voltage of at least 1000V with fully charged batteries and a short-circuit current capability of 1mA.
 - 4.1. The tester shall be clearly labeled as producing dangerous high voltages.
5. The tester shall simultaneously measure the peak and average DC voltage across the device under test.
 - 5.1. The tester shall have one button marked "FORWARD" for measuring the forward polarity peak and average voltage.
 - 5.2. The tester shall have one button marked "REVERSE" for measuring the reverse polarity peak and average voltage.
 - 5.3. The tester shall be able to detect a short circuit.
 - 5.4. Accuracy of measurements of the average DC voltage shall be $\pm(0.05\% \times \text{reading} + 0.1V)$
 - 5.5. Accuracy of measurements of the peak voltage shall be $\pm(0.5\% \times \text{reading} + 0.1V)$
 - 5.6. The average DC voltage shall be displayed with 0.1V resolution.
 - 5.7. The peak DC voltage shall be displayed with 1.0V resolution.
6. The tester shall have a separate ON button marked "ON" and a separate OFF button marked "OFF".
 - 6.1. The tester shall automatically turn the power off when not used for more than 30 seconds.
7. There shall be voltage present on the test leads only during the test.