556300 - SAM Voltage Tester

SAM Voltage Tester is a portable, battery-operated tester designed to measure the clamping voltage and DC breakdown voltage of most surge protective devices. It is specifically designed to test the Elsafe Railways range of SAM cassettes, and also has the capability to test other devices.

The SAM Voltage Tester is suitable for testing gas tubes, carbon gaps, MOVs, Zener and avalanche diodes and thyristor devices, both as components and as complete protectors.

Included are the following termination modules for simple connection to Elsafe Railways products:

- 216600A – FOR MOST SAM CASSETTES
- 216605A – FOR VZC SAM CASSETTES
- 557022 – FOR EQUALISING ARRESTOR MODULE
- 108816 – FOR SSI MKII MODULES 108815 (This base is no longer sold)
- Plugs and flexible leads for testing other devices.

A test matrix is supplied which lists the range of acceptable clamping voltages for each Elsafe Railways product.

Due to the nature of surge arresting components, each transient that a SAM cassette is subjected to, shortens the lifetime and degrades the performance of the internal components. The clamping voltages of the internal surge protecting components change after each surge, indicating internal damage.

For optimal performance and reliable surge protection it is strongly recommended that the SAM cassette be replaced if the measured clamping value is outside of the specified tolerances shown in the test matrix. Please note that the protection offered by cassettes with display flags may be degraded even if the red flag is not showing.

Specifications

Open Circuit Voltage Rate of Rise	1000 V/s
Maximum Output Voltage	1400 V
Usable Measuring Range	10-1400 V
Test Current for Clamping Devices	1 mA ±10 %
Operating Temperature	0 to +50 °C
Storage Temperature	-10 to +60 °C
Measurement Accuracy	0.5 %
Battery Life	Up to 10,000 tests per charge
Size	410(W)x332(D)x155(H) mm

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SAM Voltage Tester TECHNICAL

Testing Procedure:

1. Find the SAM Module that needs to be tested in the Test Matrix.
2. Select the correct test according to the Test Matrix via the **TEST SELECTOR**.
3. Press and hold **TEST** button until the green TEST OK LED lights up. Check the voltage shown is within the range shown on the Test Matrix, if it is not replace the SAM module.
4. If more than one test is required by the Test Matrix then proceed to the next test and return to step 2.
5. Complete all recommended tests according to the test matrix.
6. Switch Selector to OFF position and remove the test SAM, tester will automatically **DISCHARGE** the cassette.

For all other devices select TEST 6 (External Banana Connections)

1. Connect the test leads to the banana connections and the other end to the unit under test.
2. Press and hold the **TEST** button until the green TEST OK LED lights up, this is the clamping voltage.
3. Switch Selector to OFF position, disconnect test leads from unit under test.

WARNING! When using the external connectors it is possible to be exposed to a hazardous voltage and there is a risk of electric shock.

Charging Procedure

1. If the **LOW BATTERY** LED lights up when testing a SAM module this indicated that the internal battery needs to be charged.
2. Plug the supplied charger into the mains supply and the other side into the Sam Voltage Tester **CHARGE** port.
3. The LED on the Charger should turn RED.
4. Charging is complete when the LED on the Charger turns GREEN
5. When testing the high voltage clamping cassettes the battery will need to be fully charged.

Charger Specifications

Rated Input Voltage	100-240Vac
Rated Input Current	0.2 A_{rms}
Output Voltage (DC)	16.8V
Output Current	0.7A
Battery Type	Li-ion 4 Cells

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