SGT-600

safety ground tester

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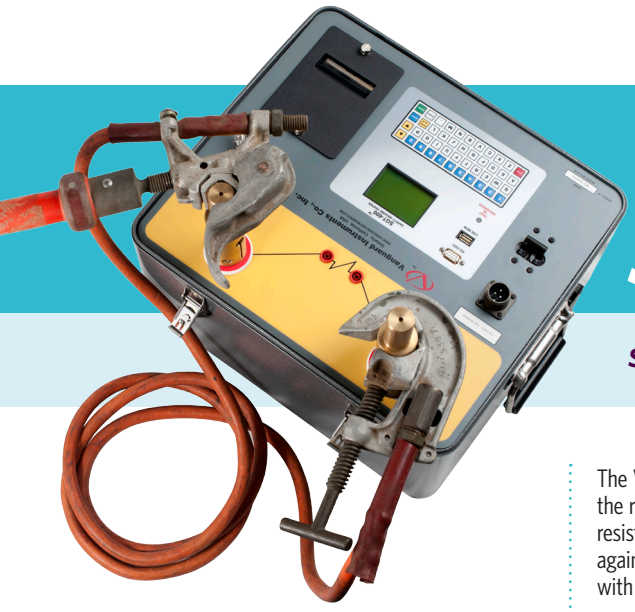
www.vanguard-instruments.com



SGT-600

safety ground tester

The Vanguard SGT-600 Safety Ground Tester is a 600A DC micro-ohmmeter designed specifically to measure the resistance of protective in-service grounding and jumper cable assemblies. The SGT-600 can measure the resistance of the grounding cables, clamps and ferrules. The measured resistance values can be compared against the calculated values (using the ASTM 2249-03 standard) and a Pass/Fail result can be printed along with the measured resistance values.

Product Overview

The SGT-600 can measure resistance value from 1 micro-ohm to 1000 milliohms. A typical test requires the two ends of the safety ground cable to be connected to the terminals of the SGT-600. The resistance of the cable and ferrules can then be measured. If the cable size, cable length and temperature are provided, the SGT-600 will determine if the cables passes or fails the test and a pass/fail indicator will be printed on the test report.

Test results are printed on the unit's built-in 2.5" thermal printer. A 44-key QWERTY-style rugged membrane keypad is used to input information and control the SGT-600. A back-lit graphic LCD screen (128 x 64 pixels) is used to display menus and test results.

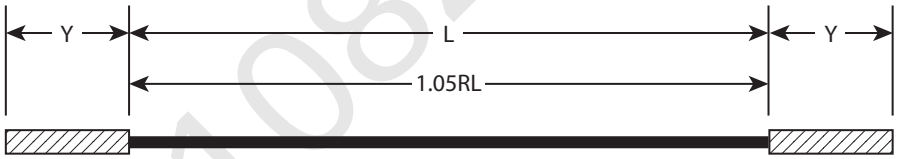
The SGT-600 can store up to 100 test records in its internal memory. It also features a USB Flash drive interface port that can be used to store test data in a USB flash drive (not included). The SGT-600 also features an RS-232C port that is used for factory diagnostics and calibration.

Test records can be reviewed and printed on a PC using the provided Vanguard VUS software.

In-Service Cable Testing

The SGT-600 measures the total resistance value of the cable under test and then compares it to the calculated value to determine the Pass or Fail result. In order to calculate the total resistance value, the user is first prompted for the cable size, cable length, and cable temperature. Total resistance (Rm) is calculated in accordance with the ASTM F2249-03 standard using the formula below:

$$Rm = 1.05\,RL + 2Y = 1.05\,RL + 320\ \mu\Omega^{*}$$



Where:

Y = Resistance of clamps, ferrule, and portions of the cable inside the ferrule, in milliohms*
L = Cable length in feet (ferrule to ferrule measurement to the nearest inch)
R = Cable resistance, in milliohms/foot

* **NOTE:** The clamp and ferrule resistance value of 160 μΩ is used per the ASTM-F2249-03 standard.

Test Cable Sizes and Length

Typical Safety Ground Cable sizes are #2, 1/0, 2/0, and 4/0. The test cable length, ranging from 1' to 50' per table 2 in the F2249-03 standard, is entered by the user.

Test Record Storage

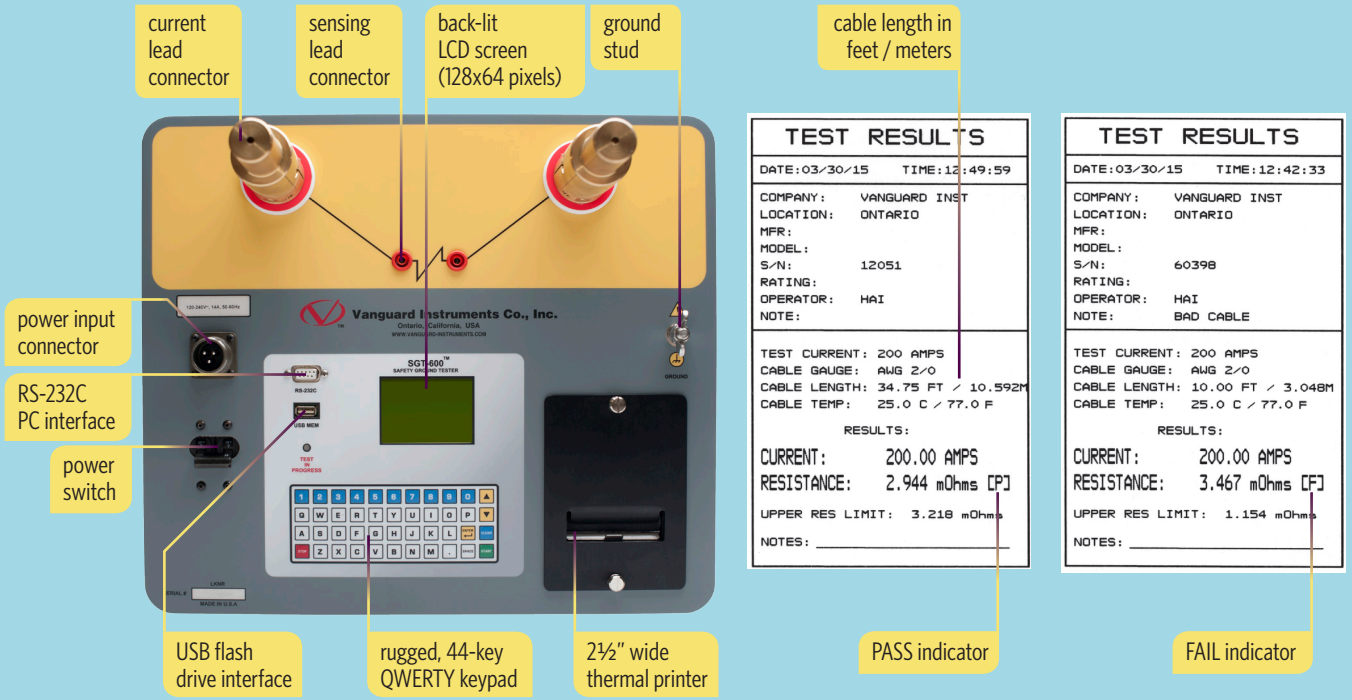
The SGT-600 can store 100 test records internally. Each test record contains test header information, test cable size, test cable length, temperature, test current, and cable resistance. Test records can also be stored on a USB flash drive via the unit's USB flash drive interface.

Sample Test Results Screen

ordering information

Part No.	Description
9112-UC	SGT-600 unit and cables
9112-SC	SGT-600 shipping case
TP3-CS	TP3 thermal printer paper (36 rolls)

SGT-600 Controls & Indicators



SGT-600 *technical specifications*

physical specifications	**Dimensions:** 16¾"W x 12½"H x 12" D (42.7 cm x 32 cm x 30.5 cm) **Weight:** 19.8 lbs. (8.9 Kg)	**input power**	100 – 240 Vac, 50/60 Hz
resistance reading range	1 micro-ohm to 1000 milliohms (max 1.5 milliohms @ 600A, 450 milliohms @ 10A, 1000 milliohms @ 1A)	**test current range**	10A – 600A (selectable in 1A steps); thermally protected DC power supply
accuracy	**10A – 49.9A:** 1% ±2 micro-ohms, **50A – 600A:** 1% ±1 micro-ohm	**test voltage**	5 Vdc
display	back-lit LCD screen (128 x 64 pixels) viewable in bright sunlight and low-light levels	**keypad**	rugged, 44-key "QWERTY" membrane keypad
internal test record storage	100 test records	**external test record storage**	up to 999 test records on external USB flash drive
pc software	Windows®-based analysis software is included with purchase price	**computer interfaces**	one RS-232C PC interface, one USB flash drive interface
safety	designed to meet IEC 61010 (1995), UL 61010-a, and CAS-C22.2 standards	**printer**	built-in 2½" wide thermal printer
temperature	**Operating:** -10°C to +50°C (+15°F to +122°F) **Storage:** -30°C to +70°C (-22°F to +158°F)	**humidity**	90% RH @ 40°C (104°F) non-condensing
cables	sensing leads, power cord, ground cable	**altitude**	2,000 m (6,562 ft) to full safety specifications
options	shipping case	**warranty**	one year on parts and labor

NOTE : the above specifications are valid at nominal voltage and ambient temperature of +25°C (+77°F). Specifications are subject to change without notice.

Instruments designed and developed by the hearts and minds of utility electricians around the world.

Vanguard Instruments Company (VIC), was founded in 1991. Currently, our 28,000 square-foot facility houses Administration, Design & Engineering, and Manufacturing operations. From its inception, VIC's vision was, and is to develop and manufacture innovative test equipment for use in testing substation EHV circuit breakers and other electrical apparatus.

The first VIC product was a computerized circuit breaker analyzer, which was a resounding success. It became the forerunner of an entire series of circuit breaker test equipment. Since its beginning, VIC's product line has expanded to include microcomputer-based, precision micro-ohmmeters, single and three phase transformer winding turns-ratio testers, transformer winding-resistance meters, mega-ohm resistance meters, and a variety of other electrical utility maintenance support products.

VIC's performance-oriented products are well suited for the utility industry. They are rugged, reliable, accurate, user friendly, and most are computer controlled. Computer control, with innovative programming, provides many automated testing functions. VIC's instruments eliminate tedious and time-consuming operations, while providing fast, complex, test-result calculations. Errors are reduced and the need to memorize long sequences of procedural steps is eliminated. Every VIC instrument is competitively priced and is covered by a liberal warranty.

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