ESD Simulator System

Top Class ESD Simulation
NSG 438

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NSG 438
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Top class ESD simulation

- **Air and contact discharge 200V to 30kV**
- **Touch panel display controlled**
- **Battery powered**
- **Compliant with all known standards (IEC, ANSI, SAE, ISO, Mil etc)**
- **Interchangeable network modules**
- **Discharge detector**

The simulation of electrostatic discharges is an important part of electromagnetic compatibility testing for any type of electronic equipment. Several test standards call for elevated pulse voltages of up to 25kV. Furthermore, demanding manufacturer-specific test procedures are often used in design to determine immunity limits. The NSG 438 ESD system fulfils all these requirements comprehensively, and supports proposed future standards

30 kV
NSG 438 generates standard discharge pulses from 200V to 30kV, in both air discharge and contact discharge operation. The full range of parameter setting possibilities for polarity, pulse repetition, counter functions, breakdown detection, etc., remains fully available, all the way up to the maximum discharge voltage setting.

Handy and ergonomic
The pistol-shaped instrument is designed to sit comfortably in the hand, with the display always clearly visible to the operator and current operating conditions constantly displayed. When NSG 438 is in battery mode, the operator has complete freedom of movement.

Conformity
NSG 438 fulfils the requirements of all known ESD standards. The basic model is type-approved and calibrated to IEC/EN 61000-4-2. A range of additional network modules is available for testing to other standards including ISO10605 and various MIL standards. An individual calibration certificate from an accredited laboratory is available on request.

Future proofing
Revisions of the ESD standards, including a more precise definition of the calibration methods and tighter specifications for the pulse parameters are being discussed by ANSI and in the IEC.
NSG 438 already meets the proposed requirements.

User friendly

NSG438 is simple, convenient and safe to use. The touch-sensitive display panel features a virtual thumb wheel for parameter setting.
All necessary functional and parameter data are displayed, and language is user-selectable for convenient and safe operation world-wide.

Pre-programmed settings for IEC 61000-4-2 / ISO 10605 ensure that the instrument is automatically set up correctly and that the appropriate discharge network is installed. Settings can also be downloaded from a PC.

Conveniently, users can create and store test conditions in the instrument's memory for subsequent re-use. A list of saved test conditions can be called up at any time.

Test probes can be readily exchanged with a simple twist and the various network modules simply push into place. Probes and discharge networks are coded and generate an error indication in the event of incorrect usage with a defined test.

NSG 438 comes packaged in a handy carrying case with space for accessories.

Features

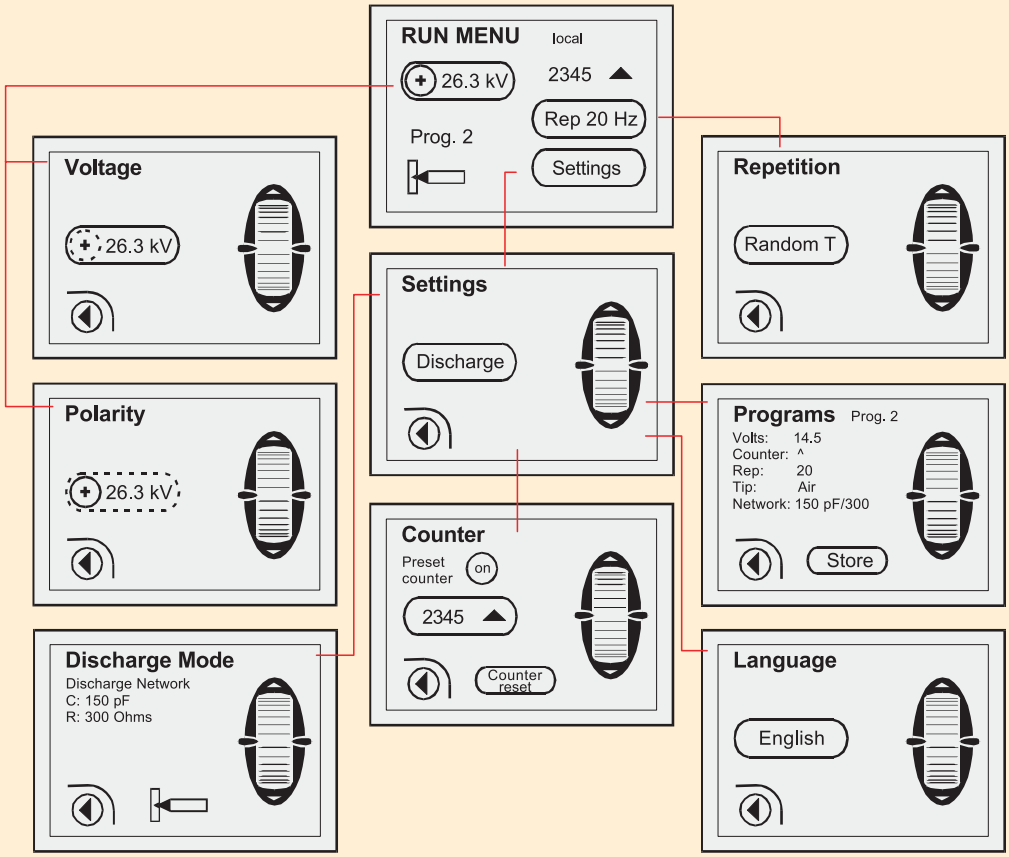
NSG 438 detects the occurrence of a discharge and automatically updates the counter and pre-counter displays - a particularly useful feature for long test runs.
The detector threshold for a valid discharge can be adjusted to suit the application. In the case of air discharges, the effective pulse voltage present at the moment of the discharge, is measured and shown on the display. This avoids the possibility of irritating errors caused by stray discharges.

For non-standard interference immunity tests, a special random generator function is provided. The controlled statistical pulse trigger can be programmed in either pulse or time mode.

Expansion possibilities

A wide range of accessories is available for NSG 438 including special network modules for all current standards, downloadable sets for standard tests, tripod supports for long-term tests, and a carrying bag for the base station.

ESD User Interface



Safety

The high-voltage generator can only be activated as a result of a deliberate action by the user. In all other cases, the instrument switches itself off automatically.

An integral interlock system allows for setting up accessibility and safety configurations even in combination with other test instruments, and there is an emergency stop switch.

Instrument configuration

The standard NSG 438 system consists of:

- A base unit with high-voltage generator and microprocessor-based control unit
- A pistol-shaped test head with exchangeable test probes and network modules, touch-panel display and base unit link cable
- Test-pistol cradle
- Mains adapter/battery charger
- Instrument carrying case

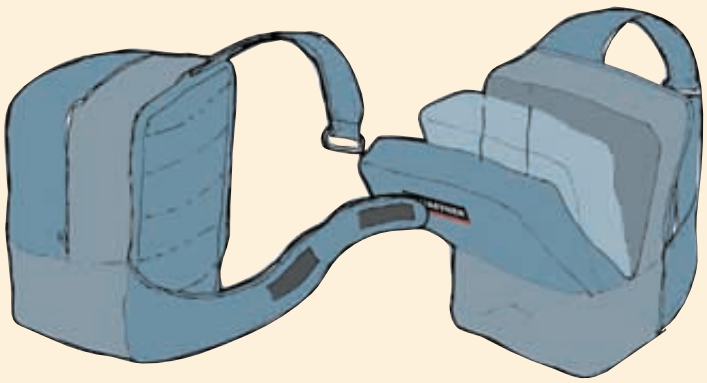
The touch-panel display with its virtual thumbweel for parameter setting shows precisely the functional and parameter data that is necessary at any moment, all arranged in a hierachical manner.

The language used for the display can be selected by the user.

Technical specifications

Instrument type	ESD generator consisting of a base unit, discharge pistol, mains adapter and battery charging unit
Power supply	Battery or mains operation (100 - 240Vac)
Base unit	High voltage generator; microprocessor-based controller, optical PC interface, interlock, input/outputs for end of test, EUT-fault
Dischage pistol	Operating unit with touch-sensitive display panel, exchangeable test probes and networks, trigger button
Pulse specifications	IEC/EN 61000-4-2 with standard network (150pF/330Ω) ISO 10605 with network INA 4381 (150pF/2kΩ) and INA 4382 (330pF/2kΩ) Others according to requirements
Discharge voltage	200V to 30kV for air discharge and contact discharge, programmable in 100V steps
Pulse polarity	Positive, negative automatic switching
Pulse repetition	Single pulse; continuous at 0.5, 1, 5, 10, 20 & 25Hz; statistical distribution in 2 modes
Voltage measurement	Dynamic discharge voltage measurement in air discharge mode
Discharge detection	With adjustable threshold
Pulse counter	Forwards pulse counter or backwards as a preset counter, up to 9999 pulses
Pulse triggering	Trigger-button, or remote control signal
Touch-panel display	Back-lit display with touch-sensitive control surfaces and a virtual thumbweel, used to monitor and set up all the instrument's functions: Discharge voltage, breakdown voltage, type of discharge, polarity, repetition rate, counter/preset counter, memory, language, instrument status, detector threshold, etc.
Test program memory	Preset test data to IEC, ISO or other standards. Store and recall of 8 complete user defined tests
Weight	Base unit: 6.5 kg; Discharge pistol (w/o cable) 1.2 kg
Environmental conditions	5 to 40°C (40 to 105°F); 20 to 80% rh (non condensing); 68 to 106kPa
Certification	To EN 61326-1, EN 61000-6-2, EN 61000-6-3

ESD Mobile case



NSG 438 secured in INA 4221 tripod support

This brochure is only intended as a guide. For full technical specifications and up to date information, please visit our website at
www.schaffner.com

Schaffner group manufacturing companies are ISO-registered. Their products are designed and manufactured under the strict quality requirements of the ISO 9000 standard.

This document has been carefully checked. However, Schaffner does not assume any liability for errors or inaccuracies.

Ordering Information

NSG 438	Basic equipment set consisting of: Base unit Discharge pistol with 2 test probes, discharge network complying with IEC/EN 61000-4-2 Cradle for discharge pistol Mains adapter / charging unit, 80-240Vac Carrying case User manual
Accessories	
INA 4381	Discharge network ISO 10605, 150pF/2kΩ
INA 4382	Discharge network ISO 10605, 330pF/2kΩ
INA 4383	Discharge network ANSI Hand model
INA 4384	Discharge network ANSI Furniture model
xxx	Special discharge networks: specify standard and/or values of R & C
INA 4411	Fast risetime test tip
INA 4421	Tripod support
INA 4422	Carry-bag for the base unit
INA 417	Opto-link to a PC with 5m opto-cable
MD 101	ESD measurement target conforming to IEC 61000-4-2

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690-733A / April 2002
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