

# NSG 435 ESD Simulator

Advanced, compact  
ESD test system



**SCHAFFNER**

EMC SYSTEMS

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# NSG 435

## A new concept



- **User programmable discharge voltage 200V to 16.5kV**
- **Built-in IEC 1000-4-2 test settings**
- **Battery powered**
- **Compact and lightweight design**

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Combining ease of operation and ergonomic design with exceptionally high functionality, the NSG 435 offers all the features of a comprehensive ESD test system in a compact, light-weight, hand-held instrument.

ESD tests form a particularly powerful part of EMC test strategies: they are used to verify complete systems and identify disturbances in installations, as well for type testing. The high frequency components of the pulse help diagnose immunity failures caused by bad cabling or system composition, and can also indicate grounding problems.

#### **Ergonomic design and high functionality**

Careful attention has been paid to ergonomic design to ensure that the NSG 435 sits easily in the hand without being tiring or uncomfortable during long or repeated test procedures. The liquid crystal display panel is clearly visible at all times in the working position and all the controls are conveniently at the user's fingertips.

The NSG 435 is powered by a rechargeable battery supply, so there is no separate high voltage generator or stiff connecting cable to hinder access to the EUT. The battery, which lasts for several days under normal test usage, can be easily interchanges and recharged in just three hours.

Microprocessor-based control and a five-key pad give access to the comprehensive range of built-in functions. The liquid crystal display shows the operating status and all user-programmed test parameters continuously. A discharge pulse counter is incorporated and a further handy feature is the provision of a preset counter for long duration tests and remote use.

The NSG 435 has its own high voltage generator producing pulses up to 16.5kV. In addition to the pre-programmed, standard IEC pulses, the user can create custom tests, using single or repetitive discharges with selectable frequencies, discharge rates and manual or automatic polarity switching. A unique feature is the detection of a real or valid discharge thereby avoiding misleading discharge counts. This is especially important during long term and remote test set up.



The NSG 435 comes with a 150pF/330Ω discharge network for tests to IEC 1000-4-2, and a range of interchangeable discharge networks is available for other standards including EN, ANSI-IEEE, ISO, etc. The discharge voltage of up to 16.5kV for air discharges and up to 9kV for contact discharges ensures a comfortable margin over and above the values required for the standard tests.



## Basic Kit



The standard basic NSG 435 simulator system consists of:

Carrying case 42 x 32 x 13.5cm (16.5 x 12.5 x 5.3ins)

NSG 435 electrostatic discharge generator

Battery pack

Discharge network for 150pF/330Ω test to IEC 1000-4-2

Test finger, air discharge

Test finger, contact discharge

Earthing cable

Battery re-charger

Operating instructions

## Optional Extras



A range of optional extras is available for special applications:

Carrying case (options)  
42 x 32 x 13.5cm (16.5 x 12.5 x 5.3ins)

Mains power supply unit

Spare battery pack

Remote triggering unit with 5m (16ft) fibre-optic cable

Discharge network for 150pF/150Ω test to IEC 801-2/1984

Special discharge networks

Test finger with fast leading edge <400ps

Coaxial measuring adapter

## Technical specifications

Pulse data - standard	As per IEC 1000-4-2
Pulse data - special	Interchangeable test fingers to conform with other standards
Discharge network - standard	150pF/330Ω as per IEC 1000-4-2
Discharge network - special	Interchangeable networks to conform with other standards
Discharge voltage - air	200V to 16.5kV (in 100V steps); tolerance ±5%, 1 to 16kV
Discharge voltage - contact	200V to 9kV (in 100V steps); tolerance ±5%, 1 to 9kV
Test finger - standard	Ball and point as per IEC, interchangeable, screw fitting
Test finger - special	Special test finger for fast rise time pulse
Voltage measurement	On HV side, dynamic; accuracy better than ±5%, 1 to 16kV
Holding time	> 5s
Triggering	Manual trigger button or optical remote input
Remote control	Optical interface for INA 415
Power supply	Rechargeable battery pack in hand-grip, interchangeable, 3hour re-charging time; mains power unit available as an accessory
Polarity	Positive, negative or automatic switching
Operating modes	Single; repetitive at 0.5, 1, 5, 10, 20, or 25Hz; continuous
Pulse counter	0 to 9999
Pre-set counter	0 to 9999
Display	LCD panel showing: discharge voltage • breakdown voltage • polarity • air/contact discharge • counter/preset counter • soft key functions • battery monitor
Weight	NSG 435 with battery: 1.2kg (2.64lbs) approx.
Environmental conditions during operation	5 to 40°C (40 to 105°F); 20 to 80% rh (non condensing); 68 to 106kPa

## A comprehensive test package

The simulator system is supplied with standard accessories, including interchangeable test fingers, an earthing cable and battery re-charger - all in a durable carrying case. There is an optional fibre optic remote control trigger for operation inside a screened room or enclosure. The LC-display gives the operator a clear, continuous indication of all the test parameters, the operational status of the instrument and the current function of each of the five software-controlled keys as well as:

- **Discharge voltage - actual or pre-set voltage, with polarity indicator**
- **Counter - number of discharges, up-counter or preselection down-counter**
- **Battery status - low battery indicator**

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## NSG 435 ordering information

### The Schaffner NSG 435 ESD simulator system range

NSG 435 ESD Simulator system basic kit	Order No.	Quantity	NSG 435 ESD Simulator system options	Order No.	Quantity
NSG 435 ESD simulator with the following accessories:			Carrying case (options)	INA 410	
• Carrying case			Mains power supply, 80 to 240V, 50/60Hz, inc. grip-adapter*	INA 402	
• Network for IEC 1000-4-2 (150pF/330Ω)			Spare battery pack	INA 405	
• Test fingers - ball and point			Remote triggering unit including 5m opto-cable	INA 415	
• Battery pack			IEC 801-2/1984 (150pF /150Ω) discharge network	INA 421	
• Earth cable			Test finger for IEC 1000-4-2 with fast leading edge < 400ps	INA 420	
• Operating instructions with:			Discharge networks, special versions	contact local sales office	
• Charging unit, 115/230V, 50/60Hz, with Euro-connector	NSG 435-01	.....	Measuring adapter IEC 1000-4-2	MD 101	.....
NSG 435 ESD simulator with all the accessories as listed above, and with:					
• Charging unit, 115/230V, 50/60Hz, with US-connector	NSG 435-04	.....	* Specify mains cable: - 01 SCHUKO; - 02 SEV 13; - 04 UL 498; - 05 BS 1363		
NSG 435 ESD simulator with all the accessories as listed above, and with:					
• Charging unit, 100V, 50/60Hz, with US-connector	NSG 435-07	.....	Use a copy of this page as your order form by completing the right-hand column with the quantities required and returning it to your local sales office.		

## SCHAFFNER

### HEADQUARTERS

Schaffner EMV AG  
CH-4542 Luterbach  
Switzerland  
Tel: [+41] 32 6816 626  
Fax: [+41] 32 6816 641  
E-mail: sales@schaffner.com

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### SALES SUBSIDIARIES

#### China

Schaffner Beijing Liaison Office  
Tel: [+86] 10 6510 1761  
E-mail: chinasales@schaffner.com

#### Japan

Schaffner EMC KK  
Tel: [+81] 3 3418 5822  
E-mail: japansales@schaffner.com

#### UK

Schaffner EMC Ltd  
Tel: [+44] 118 977 0070  
E-mail: uksales@schaffner.com

#### France

Schaffner EMC S.A.S.  
Tel: [+33] 1 34 34 30 60  
E-mail: francesales@schaffner.com

#### Singapore

Schaffner EMC Pte Ltd  
Tel: [+65] 377 3283  
E-mail: singapore@schaffner.com

#### USA

Schaffner EMC Inc  
Tel: [+1] 732 225 9533  
E-mail: usasales@schaffner.com

#### Germany

Schaffner EMC Systems GmbH  
Tel: [+49] 30 5659 8835  
E-mail: mebsales@schaffner.com

#### Sweden

Schaffner EMC AB  
Tel: [+46] 8 5792 1121  
E-mail: swedensales@schaffner.com

#### Italy

Schaffner EMC Srl  
Tel: [+39] 02 66 04 30 45  
E-mail: italysales@schaffner.com

#### Switzerland

Schaffner EMV AG  
Tel: [+41] 32 6816 626  
E-mail: switzerlandsales@schaffner.com