

# ESD Simulator System

NSG 435

- **User programmable discharge voltage 200V to 16.5kV**
- **Built-in IEC 61000-4-2 test settings**
- **Battery powered**
- **Compact and lightweight design**

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 LCD 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 interchanged 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 preprogrammed, 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 61000-4-2, 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.

### 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 LCD 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.



**UKAS Calibration option**

| Technical Specifications                  |   | NSG 435  |
|---|---|--|
| Pulse data - standard                     |   | As per IEC 61000-4-2   |
| Pulse data - special                      |   | Interchangeable test fingers to conform with other standards         |
| Discharge network - standard              |   | 150pF/330Ω as per IEC 61000-4-2                                      |
| 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 / Pre-set counter           |   | 0 to 9999 / 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 |