**VSS 500N12.7**

**VOLTAGE SURGE SIMULATOR FOR TESTING THE ISOLATION (VOLTAGE WITHSTAND) UP TO 12 KV**

The voltage surge simulator VSS 500N12.7 generates high voltage transients as required for Information technology equipment by the IEC 60950-1, IEC 60065 and ITU-T K.44 standards. The voltage surge pulses are used to test the isolation (voltage withstand) capability of components, sockets, connectors, cables and many other items. Spark over detection and voltage/current measuring functions are included in the generator.

**FOR TESTS ACCORDING TO ...**

- EN 60065
- EN 60950-1
- IEC 60065
- IEC 60950-1
- ITU-T K.44

**HIGHLIGHTS**

- Surge voltage up to 12 kV
- ITU-T test generator N.1, Wave form 1.2/50 us
- Built-in source impedance 13 ohm +25 ohm
- USB (optical link) and GPIB interface
- Interlock
- Voltage/current measurement
- Warning lamp control
- Manual operation
- Spark-over detection

**APPLICATION AREAS**

- COMPONENTS
- TELECOM
**TECHNICAL DETAILS**

### BENEFITS

**VSS 500N12.7 - 12KV VOLTAGE SURGE SIMULATOR**

The VSS 500N12.7 is a surge voltage simulator specifically designed to test insulation material, components, sockets, connectors, cables and many more items to their voltage withstand capability. Testing the voltage withstand capability by means of a transient test pulse is the most common alternative to tests using a.c. or d.c. voltages.

By means of the built-in voltage and current monitors and the Spark Over Detection you are offered detailed test results to judge the quality of the EUT.

Safety precautions are taken to assure safe operation at this high voltage level. The VSS 500N12.7 provides interlock and warning lamp control. By means of an optional test box the operator can be further protected to avoid direct contact with high voltage and to avoid harm from exploding components or fragments of them when failing.

iec.control software for remote control and documentation allows fully automated testing.

### STANDARD INFORMATION

**ITU-T IMPULSE TEST GENERATORS**

The circuit in the figure below using component values in reference of Table K1 of the normative Annex K of the IEC 60065 standard.

The circuit reference 2 of Table K.1 generates 1.2/50 us impulses (1.2 us virtual front time, 50 us virtual time to half value) as specified in IEC 60950-1 and ITU-T Recommendation K.44 to simulate transients in power distribution systems.

The impulse wave shapes are under open-circuit conditions and can be different under load conditions.

![Circuit Diagram](image)

**OPERATION**

**EASY TO OPERATE**

Front panel menu and function keys enable the user to program his test routines quickly and accurately. The cursor allows fast control of all test parameters of the programmed routine, thus test procedures are simplified and confidence is generated that every step is carried out correctly.
### VSS 500N12.7

**Model Overview**

- **VSS 500N12.7**
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  - 12 kV Pulse generator,
  - 1.2/50 us,
  - 13 ohm + 25 ohm impedance

### TECHNICAL DETAILS

**Voltage Surge Simulator, Pulse 1.2/50 US**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voltage (o.c.)</td>
<td>500 V - 12,000 V ± 10%</td>
</tr>
<tr>
<td>Pulse front time</td>
<td>1.2 us ± 30%</td>
</tr>
<tr>
<td>Pulse time to half value</td>
<td>50 us ± 20%</td>
</tr>
<tr>
<td>Current (s.c.)</td>
<td>max. 315 A ± 10%</td>
</tr>
<tr>
<td>Int. components</td>
<td>C1: 1 uF</td>
</tr>
<tr>
<td></td>
<td>C2: 33 nF</td>
</tr>
<tr>
<td></td>
<td>R1: 76 ohm</td>
</tr>
<tr>
<td></td>
<td>R2: 13 ohm</td>
</tr>
<tr>
<td></td>
<td>R3: 25 ohm</td>
</tr>
<tr>
<td>Polarity</td>
<td>Positive/negative/alternating</td>
</tr>
<tr>
<td>Event counter</td>
<td>1 - 30,000 or endless</td>
</tr>
</tbody>
</table>

**Trigger**

- **Automatic**
  - Automatic pulse release
- **Manual**
  - Single pulse release
- **External**
  - External pulse release
- **CRO trigger**
  - 5 V trigger signal for oscilloscope
- **Synchronisation**
  - 0° - 360°, resolution 1°
- **Repetition rate**
  - max. 1 Hz (1 s - 999 s)

**Measurements**

- **CRO Ù-monitor**
  - 10 Vp at 12,000 V
- **CRO Ï-monitor**
  - 10 Vp at 315 A
- **Peak voltage**
  - 12,000 V in the LCD display
- **Peak current**
  - 400 A in the LCD display
- **Current limiter**
  - for Spark over detection
  - Max. 400 A
  - Resolution 1.0 A

**Output**

- **Direct**
  - Via HV connector; Zi = 38 ohm as defined in IEC 60065 (13 ohm + 25 ohm)
- **Interface**
  - Optical interface: Opto link, 3 m cable
  - USB A connector
  - Parallel interface: IEEE 488, addresses 1 - 30

**General Data**

- **Dimensions, weight**
  - 19”/3 HU, 450 x 500 x 155 mm
  - approx. 15.5 kg
- **Supply voltage**
  - 115/230 V +10/-15%
- **Fuses**
  - 2 x 2 AT (230 V) or 2 x 4 AT (115 V)
- **Temperature**
  - 10°C to 35°C
- **Rel. humidity**
  - Max. 85 %, non condensing
- **Atmospheric pressure**
  - 86 kPa (860 mbar) to 106 kPa (1,060 mbar)
- **Operating**
  - max. 2000 m over Sea level

**Options**

- **HV Contacts**
  - Pair of gun-type HV contacts for safe application of the HV pulses to the EUT
- **iec.control**
  - Remote control and documentation software, including standard test routines and reporting capabilities.
Information about scope of delivery, visual design and technical data correspond with the state of development at time of release. Subject to change without further notice.