

## ESD Simulator

### SESD 200



- ◆ Output voltage up to 16,5 kV
- ◆ Air- and contact discharge
- ◆ Contact discharge with contact control
- ◆ Using with power supply and accumulators
- ◆ Very convenient to use
- ◆ Optional remote control set

#### Introduction

The test generator SESD 200 simulates electrostatic discharge as defined in the standard IEC / EN 61000-4-2. Depend on the Equipment Under Test (EUT) and the test set-up for laboratory tests the IEC standard shows two test methods:

##### 1. Air discharge

At this method the test generator SESD 200 must be moved to the EUT. The discharge of the high voltage is in the air. The test voltage can be varied from 100V to 16.500V. The very short rise time of each single pulse generates a wide RF spectrum and interference.

##### 2. Contact discharge

The discharge electrode with a sharp point is connected to the EUT. The discharge switch is a vacuum relay. This test method reduces the interference of parameters like approach speed, amplitude, humidity and temperature.

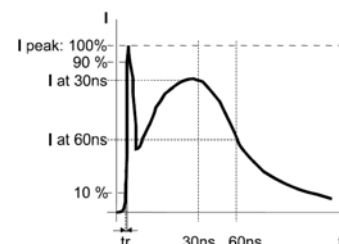
**Important:** If the test tip is not contacted (e.g. varnished or oxidised surfaces) there will be no triggering of impulses. The display shows "NO CONTACT". So we secure a safe discharge at the contact discharge mode.

The contact discharge is the favourite test method since it is most reproducible. Air discharges are used when contact discharges are not possible - e.g. at plastic housings. The test voltages for each test method are shown in the table below.

#### test levels

Level	Voltage air-discharge.	voltage contact-discharge.
1	2 kV	2 kV
2	4 kV	4 kV
3	8 kV	6 kV
4	15 kV	8 kV
x	special	special

#### typical shape of the discharge current



## Transport case for SESD 200 with additions

- ◆ ESD simulator
- ◆ Power supply / accu charge with power connection
- ◆ Test electrodes
- ◆ Ground cable
- ◆ Manual



## Technical data

### Generator:

Output voltage, free adjustment via digital potentiometer	
Test mode air discharge	0,2 kV to 16,5 kV
Test mode contact discharge	0,2 kV to 9,0 kV
Polarity of the output voltage	positive and negative
Test modes	air- and contact discharge
Repetition frequency of the discharge pulses	
Air discharge	single pulse or repeated *
	<small>*(frequency depends on the distance between the discharge electrodes and the examinant)</small>
Contact discharge	single pulse, 1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz
Permanent operation	possible at air- and contact discharge
Holding time	≥ 5 sec
Pre selectable counter	1 - 9999
Discharge electrodes	in conformity to IEC / EN 61000-4-2
Energy storage capacity	150 pF ± 10% (customer specific on demand)
Discharge resistor	330 Ohm ± 5% (customer specific on demand)
Operation temperature range	0 - 40° Celsius
Relative humidity	0 - 60%
Weight	ca. 1300 g

### Power supply:

Supply voltage	85-264 VAC / 47-63 Hz
Power consumption	< 50 VA
Weight	ca. 600 g

### Options:

SESD 200 M	ESD simulator acc. IEC /EN 61000-4-2 and MIL-STD-883 C (MIL-M-38510, DOD-STD-1686)
SESD 260	optical interface including control-software for MS-Windows™
SESD 8800-4	ESD verification set 2 Ohm (4 GHz) to verify the ESD pulse

### Standard definition acc. IEC / EN 61000-4-2

level	test voltage contact discharge	rise time (contact dis.)	1. peak current (± 10 %)	current after 30 ns (± 30 %)	current after 60 ns (± 30 %)
1	2 kV	0,7 - 1,0 ns	7,5 A	4 A	2 A
2	4 kV	0,7 - 1,0 ns	15,0 A	8 A	4 A
3	6 kV	0,7 - 1,0 ns	22,5 A	12 A	6 A
4	8 kV	0,7 - 1,0 ns	30,0 A	16 A	8 A