SCHLÖDER
EMV-Systeme & Komponenten

ESD simulator 16,5 kV

SESD 216

- Battery or mains operation
- 16,5 kV AIR / 10 kV CON discharge
- IEC 61000-4-2 (150 pF / 330 Ohm)
- Predefined tests – Standard and others

Introduction

The test generator SESD 216 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 216 must be moved to the EUT. The discharge of the high voltage is in the air. The test voltage can be varied from 200V to 16.5000V. The very short rise time of each single pulse generates a wide RF spectrum and interference.

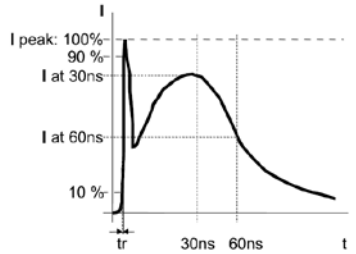
2. **Contact discharge**
   The discharge electrode with a sharp point is connected to the EUT. The discharge switch is a vacuum relay. This test method reduces the interference of parameters like approach speed, amplitude, humidity and temperature.
   Important: If the test tip is not contacted (e.g. 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 level

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
	SESD 216	SESD 216
x	max. 16,5 kV	max. 10 kV

Typ. shape of the discharge current



Technical data may be changed without notice

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SESD 216 carrying case includes (3,2 kg):

- ESD simulator
- Battery charger unit incl. cable
- Test tip air discharge and test tip contact discharge
- Ground cable
- Manual

Technical data

Generator:

Output voltage, adjustment via digital potentiometer

Test mode air discharge	0,2 kV to 16,5 kV, 100V steps
Test mode contact discharge	0,2 kV to 10,0 kV, 100V steps
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 * *(frequency depends on the distance between the discharge electrodes and the examinant)
Contact discharge	single pulse, 0,1 Hz, 0,2 Hz, 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	app. 1260 g

Power supply:

Supply voltage	IN: 100-240 VAC / 47-63 Hz; OUT: 9 VAC / 3 A
Weight	app. 200 g

Options:

SESD 3026	Test tip, length 50 mm with spring pin, for contact discharge
SESD 271	VCP – vertical coupling plate, include SESD 272
SESD 272	Earth cable include 2 x 470 kohm resistor, 2m long
SESD 8800-4	ESD verification set 2 Ohm (4 GHz) to verify the ESD pulse
SESD 30 S100	Optical set and remote software

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

Test-Level	Test voltage contact disch.	Rise time (± 25 %)	1. Peak current (± 15 %)	Current after 30 ns (± 30 %)	Current after 60 ns (± 30 %)
1	2 kV	0,8 ns	7,5 A	4 A	2 A
2	4 kV	0,8 ns	15,0 A	8 A	4 A
3	6 kV	0,8 ns	22,5 A	12 A	6 A
4	8 kV	0,8 ns	30,0 A	16 A	8 A