

ESD simulator 30 kV

SESD 230

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



Introduction

The test generator SESD 230 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 500V to 30.000V. 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.

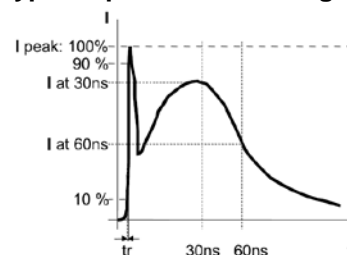
Important: If the test tip is not contacted (e.g. varnished or oxidised surfaces) there will be no triggering of impulses. The display shows "NO CONTACT". So we secure a safe discharge at the contact discharge mode.

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 230	SESD 230
x	max. 30 kV	max. 30 kV

Typ. shape of the discharge current



SESD 230 carrying case includes (3,4 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 0,5 kV to 30,0 kV, 100V steps

Test mode contact discharge 0,5 kV to 30,0 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 $\pm 10\%$ (customer specific on demand)

Discharge resistor 330 Ohm $\pm 5\%$ (customer specific on demand)

Operation temperature range 0 - 40° Celsius

Relative humidity 0 - 60%

Weight app. 1470 g

Power supply:

Supply voltage IN: 100-240 VAC / 47-63 Hz; OUT: 9 VDC / 3 A

Weight app. 200 g

Options:

SESD 3025 Test tip, diameter 30 mm, for AIR discharge > 15 kV

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 ($\pm 25\%$)	1. Peak current ($\pm 15\%$)	Current after 30 ns ($\pm 30\%$)	Current after 60 ns ($\pm 30\%$)
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
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X	30 kV	0,8 ns	112,5 A	60 A	30 A