

SESD 230

ESD simulator 30 kV

- IEC 61000-4-2 (150 pF / 330 Ohm)
- Battery and mains operation
- 30 kV AIR and CONTACT discharge
- Programmable automatic test runs
- Predefined test levels acc. to the standard
- Contact control for contact discharge
- Displaying of the real discharge voltage at air mode
- Counter mode with and without automatic polarity change



Introduction

The ESD Simulator SESD 230 is suitable for performing EMC tests on systems in accordance with the standard IEC / EN 61000-4-2 (ESD test). Higher test levels can be set far beyond the standard limits. Depending on the test object and test setup, two test methods are to be used:

1. Air discharge

In this case, the pulse is triggered by approaching the SESD 230 towards the DUT. The high voltage applied to the discharge electrode is discharged suddenly, resulting in a very broadband high-frequency interference spectrum. This in turn can lead to influences on the test specimens.

2. Contact discharge

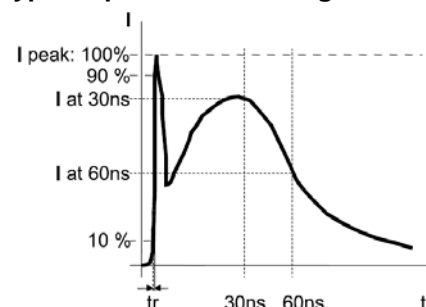
With this method, the probe of the generator is placed directly on the test object. The actual "impulse triggering" takes place via a relay contact and reduces the influencing factors such as approach speed, amplitude height, air humidity and temperature.

Important: In the case of non-contacting (e.g. painted or oxidized surface), the impulses are not triggered. The display shows "No contact". This ensures that when triggering a discharge actually takes place.

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 defined for each test method are shown in the table below:

Test 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	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	0,2 kV to 30 kV, 100V steps
Test mode contact discharge	0,2 kV to 30 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 *
Contact discharge	single pulse, 0,1 Hz, 0,2 Hz, 1 Hz, 2 Hz, 5 Hz, 10 Hz, 20 Hz
Continuous 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%
Discharge resistor	330 Ohm ± 5%
Operation temperature range	0 - 40° Celsius
Relative humidity	0 - 60%
Weight	app. 1470 g

*(frequency depends on the distance between the discharge electrodes and the examinant)

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 3027	Test tip, length 70 mm with spring pin, for contact discharge
SESD 3036	Hook on the generator for hanging on a balancer
SESD 30 T 1000	Support arm with balancer
SESD 271	VCP – vertical coupling plate, include earth cable 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 S 100	Remote control software and optical fiber set

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

Test-Level	Test voltage contact discharge	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
x	30 kV	0,8 ns	112,5 A	60 A	30 A