

# SESD 216

## ESD-Simulator 16.5 kV

### IEC / EN 61000-4-2

- $\pm 16.5$  kV Air- /  $\pm 10$  kV Contact discharge
- Discharge impedance 150 pF / 330 Ohm
- Contact control for contact discharge
- Counter mode with and without automatic polarity change
- With test tips for contact (SESD 3021) and air discharge (SESD 3020)



### With self-test of the simulator

Saving of cost-intensive and time-consuming intermediate calibrations. Indispensable for automatic test procedures.

### Overview

The ESD Simulator SESD 216 is suitable for performing EMC tests on systems in accordance with the standard IEC / EN 61000-4-2 (ESD test). Depending on the test object and test setup, two test methods are to be used: **Air discharge and Contact discharge**. In the air discharge the pulse is triggered by approaching the SESD 216 towards the DUT. With the method of contact discharge the probe of the generator is placed directly on the test object.

**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.

### Key Facts

- 2 test methods are to be used: **Air discharge and Contact discharge**
- Higher test levels can be set beyond the standard limits.
- Displaying of the real discharge voltage at air mode
- Programmable automatic test runs
- Large display with easy to read digits
- Battery and mains operation



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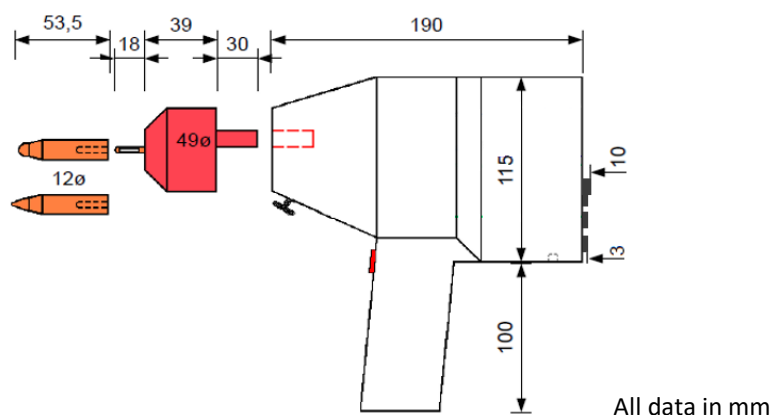
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### Technical data I

SESD Simulator 216	
Output - voltage	adjustment via digital potentiometer
Test modes	air- and contact discharge
Air discharge	±0.2 kV up to <b>±16.5 kV</b> ,
Contact discharge	±0.2 kV up to <b>±10.0 kV</b> , 100 V steps
Polarity of the output voltage	positive and negative Special function: in "counter mode" optional polarity changeover after half of the set pulses
Charging resistance	50 MΩ
Repetition frequency	
Air discharge	single pulse or repeated (frequency depends on the distance between the discharge electrodes and the DUT)
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

SESD Simulator 216	
Holding time	≥ 5 sec
Pre selectable counter	1 - 9999
Discharge electrodes	acc. to IEC 61000-4-2
Energy storage capacity	150 pF ± 10%
Discharge resistor	330 Ohm ± 5%
Self-test	In 14 steps, can be activated via interface or service menu
Operation temperature	0 - 40° Celsius
Relative humidity	0 - 60 %
Weight	app. 1260 g
Power supply	
Power supply	IN: 100-240 VAC/47-63 Hz; OUT: 9 VDC / 3 A
Weight	app. 200 g

### Technical data II

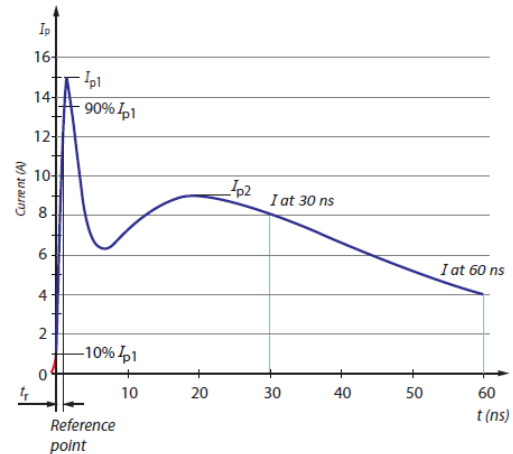


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## Technical data III

**Ideal waveform  
of the contact  
discharge current  
at 4 kV**



## Currents acc. to IEC / EN 61000-4-2, Ed. 3

Test-Level	Associated voltage level	1. peak current of discharge ( $\pm 15\%$ )	Rise time ( $\pm 25\%$ )	2. peak current of discharge ( $-20\% / +40\%$ )	Current after 30 ns ( $\pm 30\%$ )	Current after 60 ns ( $\pm 30\%$ )
CD	AD	$I_{p1}$		$I_{p2}$		
1	1	2 kV	7.5 A	0.8 ns	4.5 A	4 A
2	2	4 kV	1.0 A	0.8 ns	9.0 A	8 A
3	--	6 kV	22.5 A	0.8 ns	13.5 A	12 A
4	3	8 kV	30.0 A	0.8 ns	18.0 A	16 A
--	4	15 kV	56.3 A	0.8 ns	33.8 A	30 A

X\*

CD = Contact discharge, AD = Air discharge

\* Level "X" is a freely definable value (SESD 216 up to 16.5 kV air discharge and up to 10 kV contact discharge)

## Scope of supply of SESD 216

- ESD simulator SESD 216
- Battery charger incl. cable
- Standard discharge electrodes for air discharge (SESD 3020)
- Standard discharge electrodes for contact discharge (SESD 3021)
- Weight (with content): 3.2 kg
- Ground cable (SESD 231)
- Manual



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Options	
SESD 3025	Test tip, length 50 mm, for air contact
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 231	Discharge return cable
SESD 270	HCP – Horizontal coupling plane
SESD 271	VCP – Vertical coupling plane, include earth cable SESD 272
SESD 272	Earth cable include 2 x 470 kOhm resistor, 2 m long
SESD 280	Silicon sheet: thickness 0.5 mm, resistance $3 \times 10^{15} \Omega / \text{cm}$ (IEC/EN 61000-4-2)
SESD 30 T 1000	Support arm with balancer
SESD 8800-4	ESD verification set 2 Ohm (4 GHz) to verify the ESD pulse
SESD Target Case	Transport case - ESD Verification set
SESD 30 S120	Remote control software and optical fiber set

All information regarding appearance and technical data correspond to the current state of development at the time of release of this data sheet. Errors and technical changes excepted.

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