



MODEL NUMBER:
ESD30

ESD SIMULATOR 30 kV

- IEC 61000-4-2 (150 pF / 330 Ohm)
- Battery and mains operation
- 30 kV AIR / 10 kV 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 ESD30 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 ESD30 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.

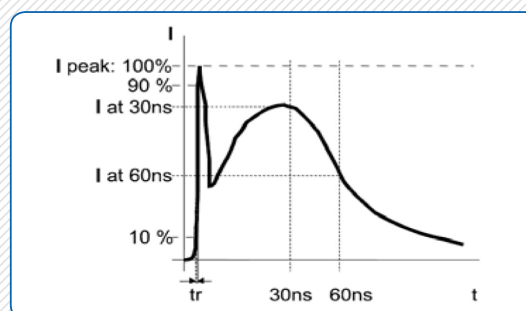
Important: In the case of non-contacting (e.g. painted or oxidized surface), the impulses are not triggered. The display shows "No contact". This ensures that when triggering a discharge actually takes place.

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

| 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



ESD30 CARRYING CASE INCLUDES (3,2 KG):

- ESD simulator
- Battery charger 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* |
| Contact discharge | *(frequency depends on the distance between the discharge electrodes and the examinant) 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 |

POWER SUPPLY:

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

OPTIONS:

| | |
|--------------|---|
| ESD3026 | Test tip, length 50 mm with spring pin, for contact discharge |
| ESD3027 | Test tip, length 70 mm with spring pin, for contact discharge |
| ESD3036 | Hook on the generator for hanging on a balancer |
| ESD30 T 1000 | Support arm with balancer |
| ESD271 | VCP – vertical coupling plate, include earth cable ESD 272 |
| ESD272 | Earth cable include 2 x 470 kohm resistor, 2m long |
| ESD8800-4 | ESD verification set 2 Ohm (4 GHz) to verify the ESD pulse |
| ESD30 S100 | 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 | 8 kV | 0,8 ns | 22,5 A | 12 A | 6 A |
| 4 | 15 kV | 0,8 ns | 30,0 A | 16 A | 8 A |
| x | 30 kV | 0,8 ns | 112,5 A | 60 A | 30 A |