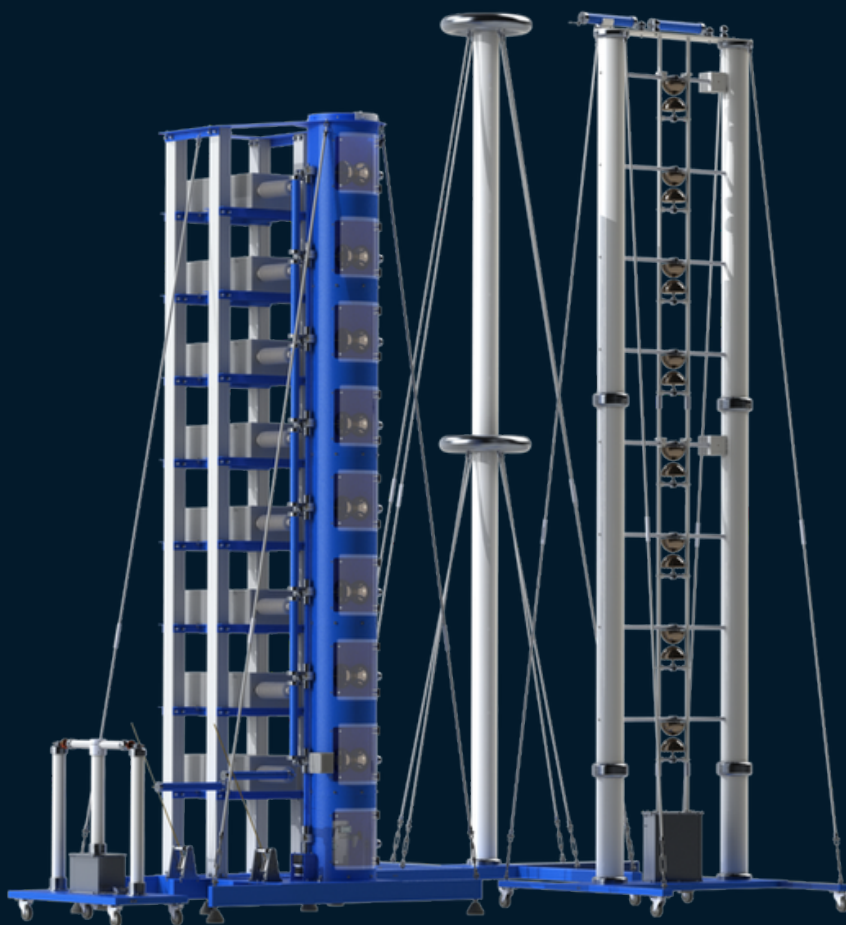


IMPULSE GENERATOR

ATMOSPHERIC IMPULSE AND SWITCHING SURGE GENERATOR

Standards

IEC 60060, NBR 61083, NBR 6939, NBR 5356 and NBR 5440



VOLTAGE IMPULSE GENERATOR

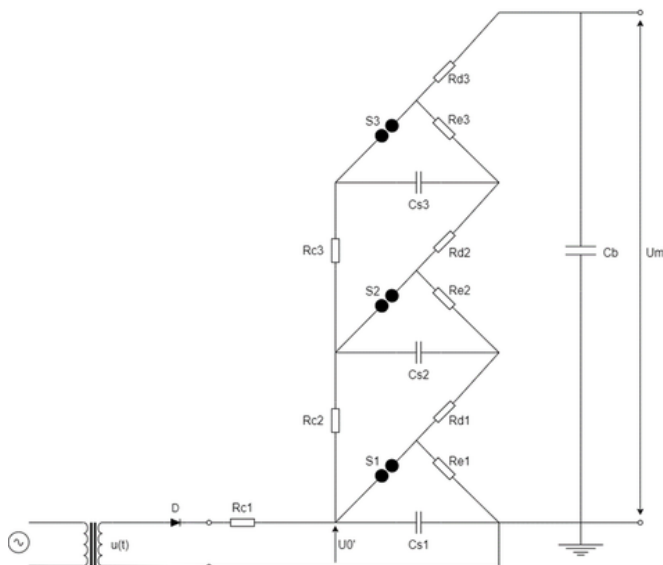
Description

The high voltage impulse generator is an essential component for assessing the withstand capability of electrical equipment to dielectric stress caused by atmospheric and switching voltage surges in the system. HVEX is the only national manufacturer of impulse generators, and these can be customized according to the customer's needs.

Applicable Equipment:

- Transformers;
- Insulators;
- Cables;
- Bushings;
- Terminations;
- Circuit breakers;
- Capacitors;
- etc.

The average test time varies according to the testing requirements and the number of desired curves. Generally, each curve takes a period of 3 to 5 minutes for each discharge.



Operation

The transformer to be tested is connected to the Generator Module, according to the current standard. The test voltage and sphere distance are adjusted in the software.

The resistors for adjusting the leading and trailing times have quick-connect fittings to simplify replacement. The operator can also select how many stages will be used.

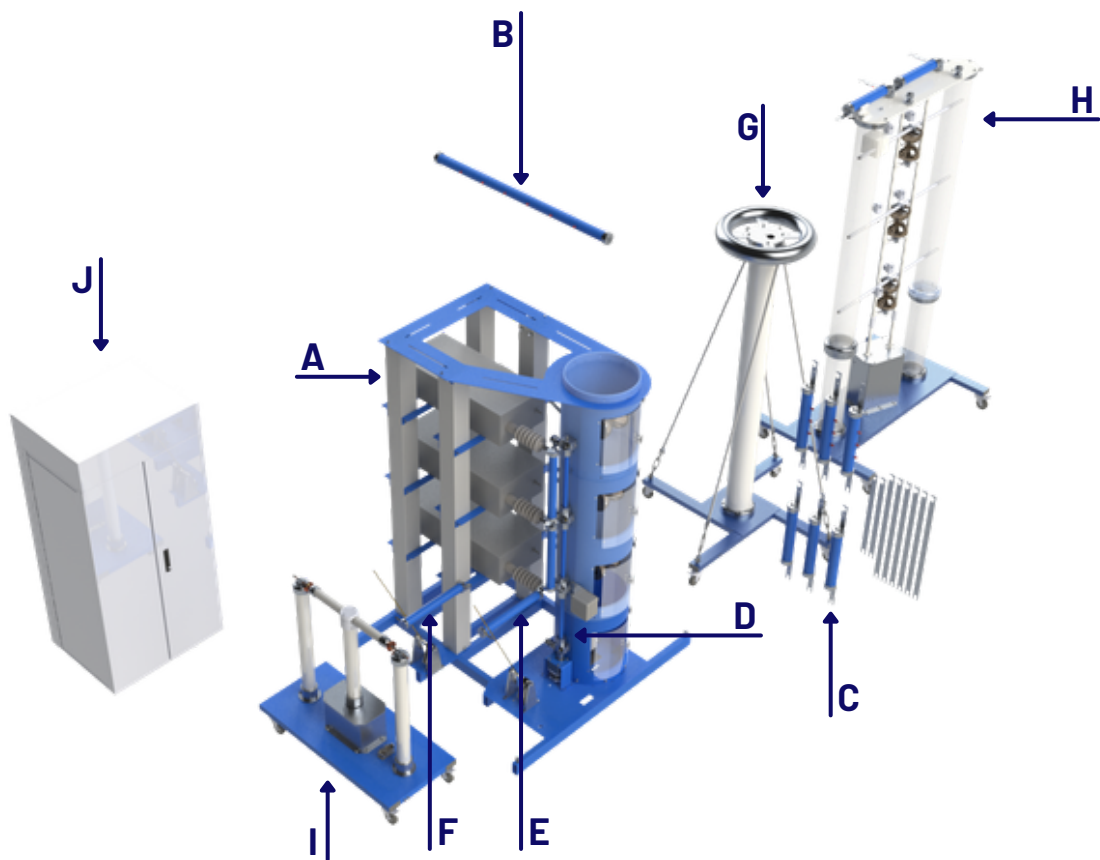
After the adjustments are made, the reduced voltage test is initiated to configure the parameters defined for the Generator and the load for resistor correction.

Once this step is completed, the remaining impulses can be performed, always configuring the distances and test voltage according to the manual.

The oscilloscope waveform is automatically loaded after each shot, and all waveform parameters are also calculated. Each waveform can be saved in the database for automated generation of the final report.



VOLTAGE IMPULSE GENERATOR



A: Charging capacitors

B: Front resistor

C: Tail resistors

D: Charging resistors (Stages)

E: Charging resistors (Input)

F: Grounding resistor

G: Voltage divider

H: Trigger module

I: Rectifier diode

J: Power panel

Technical Specifications

Standards	IEC 60060, NBR 61083, NBR 6939, NBR 5356 and NBR 5440
Discharge voltage	Up to 2400 kV
Discharge energy	2.5 kJ, 5 kJ or 10 kJ per stage; total energy up to 480 kJ, depending on configuration
Voltage by stage	Up to 200 kV
Capacitance of each stage	100 nF to 4 μ F, typically 1 to 2 μ F
Waveform	• 1.2 $\times$ 50 μs (atmospheric impulse) • 250 $\times$ 2500 μs (maneuver impulse) • For further options, contact the technical team.
Voltage divider	Purely resistive, capacitive or mixed
Measurement uncertainty	< 1%
Communication protocol	TCP/IP, Modbus
Resistors	70, 125, 200, 300, 400, 500 e 600 Ω
• Series • Parallel • Damping • Grounding	5 or 10 Ω 10 to 50 Ω 10 to 1000 Ω 0,6 m + 0,50 m per stage
Weight	102 kg per stage
Sampling ratio	2,5 GSa/s

We provide solutions for improvement of electrical energy generation, transmission and distribution efficiency, quality and reliability. With a highly specialized and experienced team in research, development and innovation, HVEX develops tailor-made solutions for Brazilian and foreign markets. Wide range of products with solutions focused on signal transduction, measurement, monitoring and protection.



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