

IMPULSE GENERATOR

REPETITIVE IMPULSE GENERATOR

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



IMPULSE GENERATOR

Description

High-voltage impulse generators are essential elements for assessing the withstand capability of electrical equipment to dielectric stresses caused by atmospheric and switching voltage surges in the electrical system.

HVEX generators are designed according to the needs of each client and can be applied, according to standards IEC 60060, NBR 61083, NBR 6939, NBR 5356, and NBR 5440, in all types of transformers (transmission, distribution, protection, and measurement), insulators, cables, bushings, terminations, circuit breakers, capacitors, reactors, lightning arresters, SPDs, surge protectors, etc.

HVEX is the only national manufacturer of impulse generators.

Applicable equipment:

- Transformers (transmission, distribution, protection, and measurement);
- Insulators;
- Cables;
- Bushing;
- Terminations;
- Circuit breakers;
- Capacitors;
- Reactors;
- Lightning arresters;
- SPDs;
- Surge protectors.

Benefits

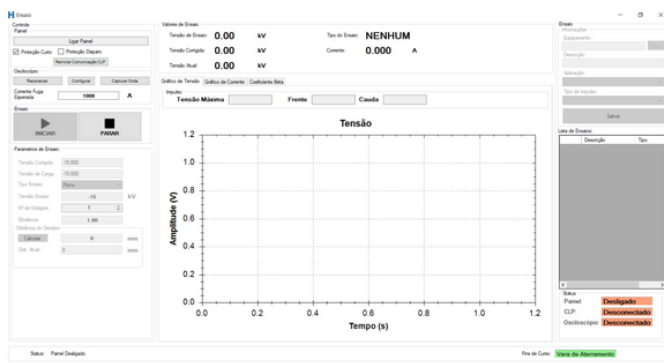
- 2-year warranty;
- Technical assistance nationwide (on-site or remote);
- Custom resistance design according to client's applications;
- Regular software updates to meet normative changes;
- Best cost-benefit ratio, as it is a high-quality equipment with all accessories included;
- FINAME code and/or direct financing with HVEX available;
- Possibility of customization according to specific client needs.



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HVEX LIAS

HVEX LIAS is a supervisory software designed to register, configure, and remotely trigger impulse voltage tests, as well as to store and analyze the obtained results. Through HVEX LIAS, it is also possible to automatically generate customized technical reports in .pdf and .doc formats.



Safety

The HVEX generators are designed with high automation so that direct operator contact with the equipment in service is unnecessary. Thus, measurement functions with cut-off and polarity reversal modules can be performed remotely. The generators also feature audible operation alarms, protection relays against leakage current and overload, automatic grounding to ensure operator safety, and grounding design, carried out by HVEX, according to the customer's installation.

Control Station:

- Used to control atmospheric impulse voltage tests.
- It includes the control panel, computer with supervisory software installed, oscilloscope, support for grounding rod, voltage variator, and device protection.

Customer registration:

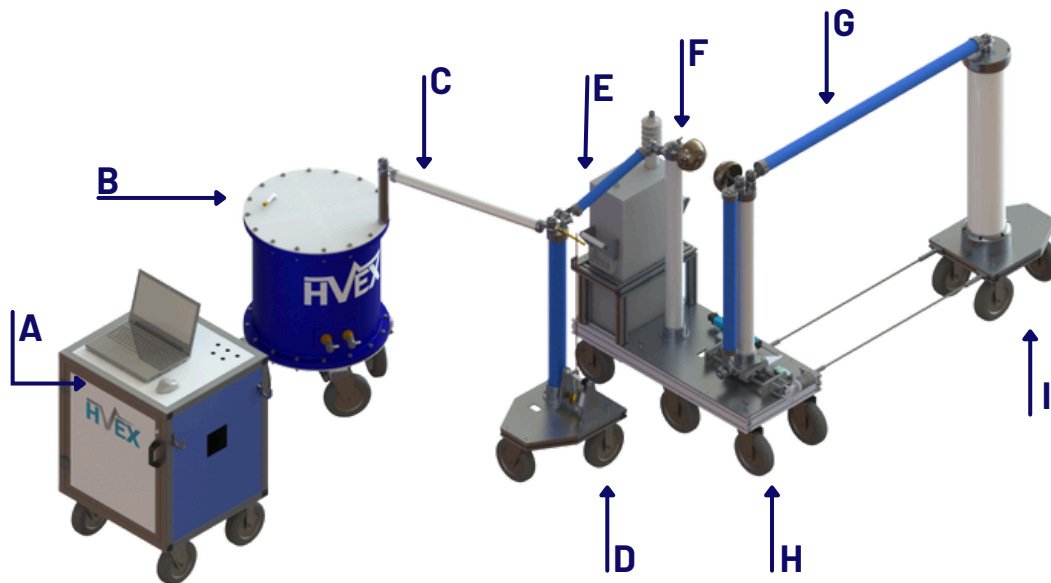
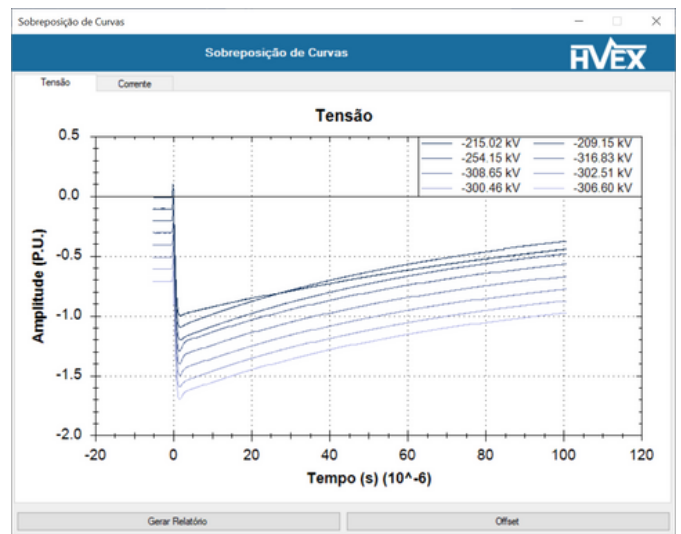
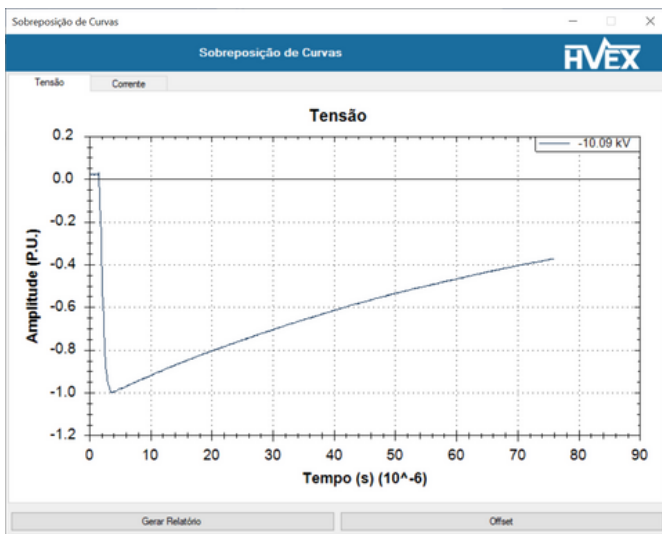
The screenshot shows the 'Clientes' (Customers) registration form. It is divided into two sections: 'Consulta' (Search) and 'Cadastro' (Registration). The 'Consulta' section has a text field for 'Razão Social' (Company Name). The 'Cadastro' section has text fields for 'Nome Fantasia' (Trade Name), 'Telefone' (Phone), 'Contato' (Contact), 'Email', 'Endereço (Linha 1)' (Address Line 1), 'Endereço (Linha 2)' (Address Line 2), and 'Localização' (Location). At the bottom, there are four buttons: 'Salvar' (Save), 'Atualizar' (Update), 'Excluir' (Delete), and 'Limpar' (Clear).

Registration of the equipment to be tested:

The screenshot shows the 'Equipamentos' (Equipment) registration form. It is divided into two sections: 'Consulta' (Search) and 'Cadastro' (Registration). The 'Consulta' section has a dropdown menu for 'Classe de Tensão [kV]' (Voltage Class [kV]) with '0.0' selected. The 'Cadastro' section has text fields for 'Número Interno' (Internal Number), 'Número de Série' (Serial Number), 'Lote' (Batch), and 'Modelo' (Model). Below these are text fields for 'Empresa' (Company) and 'Fabricante' (Manufacturer), each with a dropdown arrow. At the bottom, there are four buttons: 'Salvar' (Save), 'Atualizar' (Update), 'Excluir' (Delete), and 'Limpar' (Clear).

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Graphic Analysis



Impulsive voltage test modules

- A. Control panel and variable font
- B. Elevator source
- C. Rectifier diode
- D. Automatic grounding system
- E. Load limiting resistor

- F. Charging Capacitor
- G. Resistor for waveform adjustment (front)
- H. Resistor for waveform adjustment (tail)
- I. Resistive divider for voltage measurement

Technical Specifications

High Voltage Source

Power	5 kVA
Voltage class	70 kV in the HV windings
	220 V in LV windings
Transformation Ratio	3500 : 11
Oil type	Mineral

Divider

HV Voltage	100 kV
LV Voltage	40 V
Transformation Ratio	2500 : 1

Diode

Voltage class	100 kV (DC)
Rated current	150 mA
Maximum Reverse Voltage	240 kV (peak)
Maximum Reverse Current	10 μ A
Maximum Direct Voltage	240 kV peak
Maximum Forward Current	150 mA
Uncertainty	< 1%
Primary Impedance	600 M Ω
Secondary Impedance	30 k Ω
Transformation Ratio	20000 : 1

Technical Specifications

Charging Capacitors

Voltage class (DC)	100 kV
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Maximum voltage (DC)	120 kV
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Capacitance	1 μ F
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Weight	86 kg
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Power	5 kVAr
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Front Resistor

Rfront	300 Ω with tap at 30 Ω and every 45 Ω
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Tail Resistor

R1	10 Ω
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R2	50 Ω
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R3	70 Ω
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R4	115 Ω
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R5	500 Ω
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R6	300 Ω , 400 Ω , 500 Ω , 600 Ω
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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.



Boosting the Innovation



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