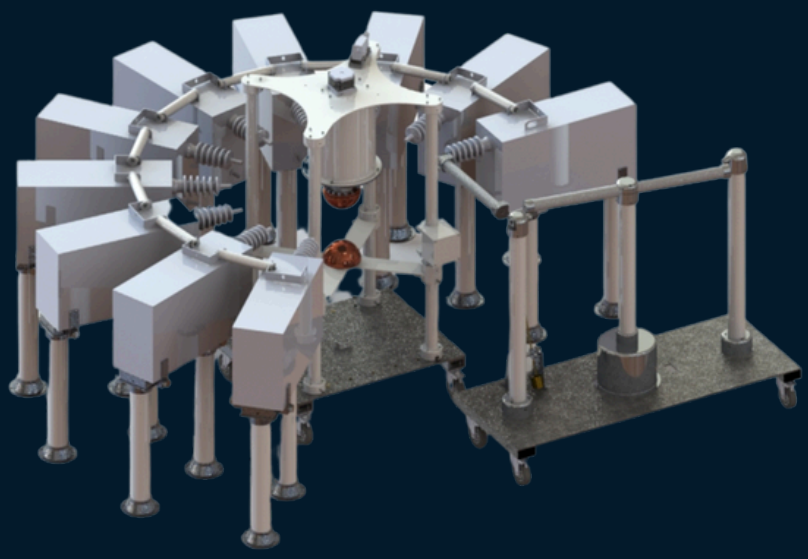
HVEX
Driving Innovation

IMPULSE GENERATOR

IMPULSE GENERATOR WITH COMBINED WAVE

Standards
IEC 60060, IEC 60099-4, IEC 62305-1, IEC 61643-11 and NBR 6939



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CURRENT IMPULSE GENERATOR

Description

HVEX current impulse generators are designed for testing surge arresters and surge protective devices (SPDs), including their varistors. Applications include current impulse testing and residual voltage measurement on these devices.

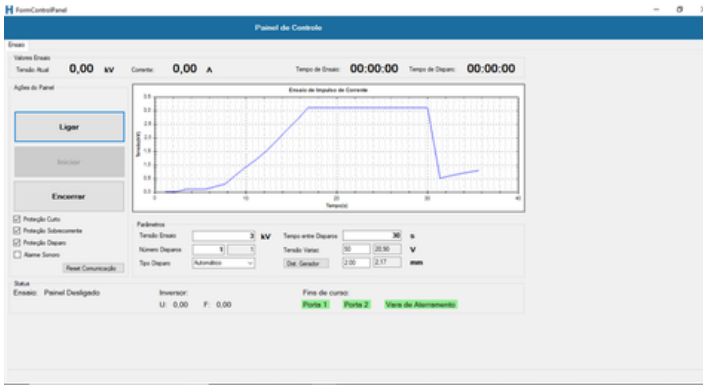
The system can generate up to 350 kA and measure residual voltage up to 250 kV, depending on the configuration and test requirements.

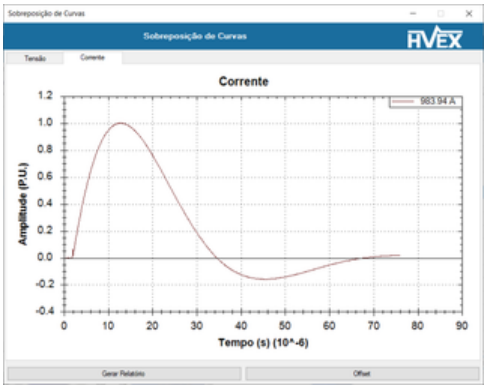
The compact ring-type structure and reactor configuration produce the current impulses specified for each application. The system can be customized to meet surge arrester and SPD testing requirements.

Operation

1. **Transformer:** Raises the voltage level to the desired magnitude suitable for the testing application.
2. **Rectifier:** Converts the alternating current (AC) from the transformer into direct current (DC), providing a continuous power supply.
3. **Power Capacitors:** These capacitors accumulate energy from the rectifier, forming an energy storage circuit. They store electrical energy temporarily and release it rapidly when needed.
4. **Control System:** The entire process is computerized and controlled to ensure efficient operation. Parameters such as voltage amplitude, pulse duration, and spark gap distances are adjusted as per testing requirements.
5. **Surge Generation:** The stored energy in the capacitors is discharged through appropriate connections and spark gaps, generating a high-energy impulse or surge current. This surge is applied to the test object to simulate real-world transient events.
6. **Measurement and Analysis:** The response of the test object is measured and analyzed. The resulting waveform, including rise time and decay time, provides insights into the performance and resilience of the equipment under test against voltage surges.

This surge generator system plays a crucial role in ensuring the reliability and safety of electrical equipment by subjecting them to realistic operating conditions and assessing their response to transient disturbances.





Technical Specifications

Standards	IEC 60060, IEC 60099-4, IEC 62305-1, IEC 61643-11, NBR 6939
Discharge current	Up to 350 kA, according to customer application
Residual voltage	Up to 250 kV, according to customer application
Current impulses	Current: 4/10, 8/20 and 10/350 µs, according to configuration and surge arrester or SPD test requirements. Residual voltage is measured across the device under current impulse.
Arrangement	Ring
Capacitance of each load unit	1 to 10µF, being able to total 200 uF
Voltage divider	Purely resistive, capacitive or mixed
Measurement uncertainty	< 1%, voltage < 1%, current
Communication protocol	TCP/IP, Modbus
Weight	200kg to 2Ton
Environmental conditions	
Altitude	< 1000 m
Humidity	< 95%
Temperature of operation	0 °C to 40 °C

HVEX develops tailored solutions for power generation, transmission and distribution. Our team combines research, development and innovation to deliver products for signal transduction, measurement, monitoring and protection in Brazil and international markets.

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35 3622-2699

contato@hvex.com.br

www.hvex.com.br

R. Ismael Pinto de Noronha, 86,
Nossa Sra. de Fatima, Itajubá-MG