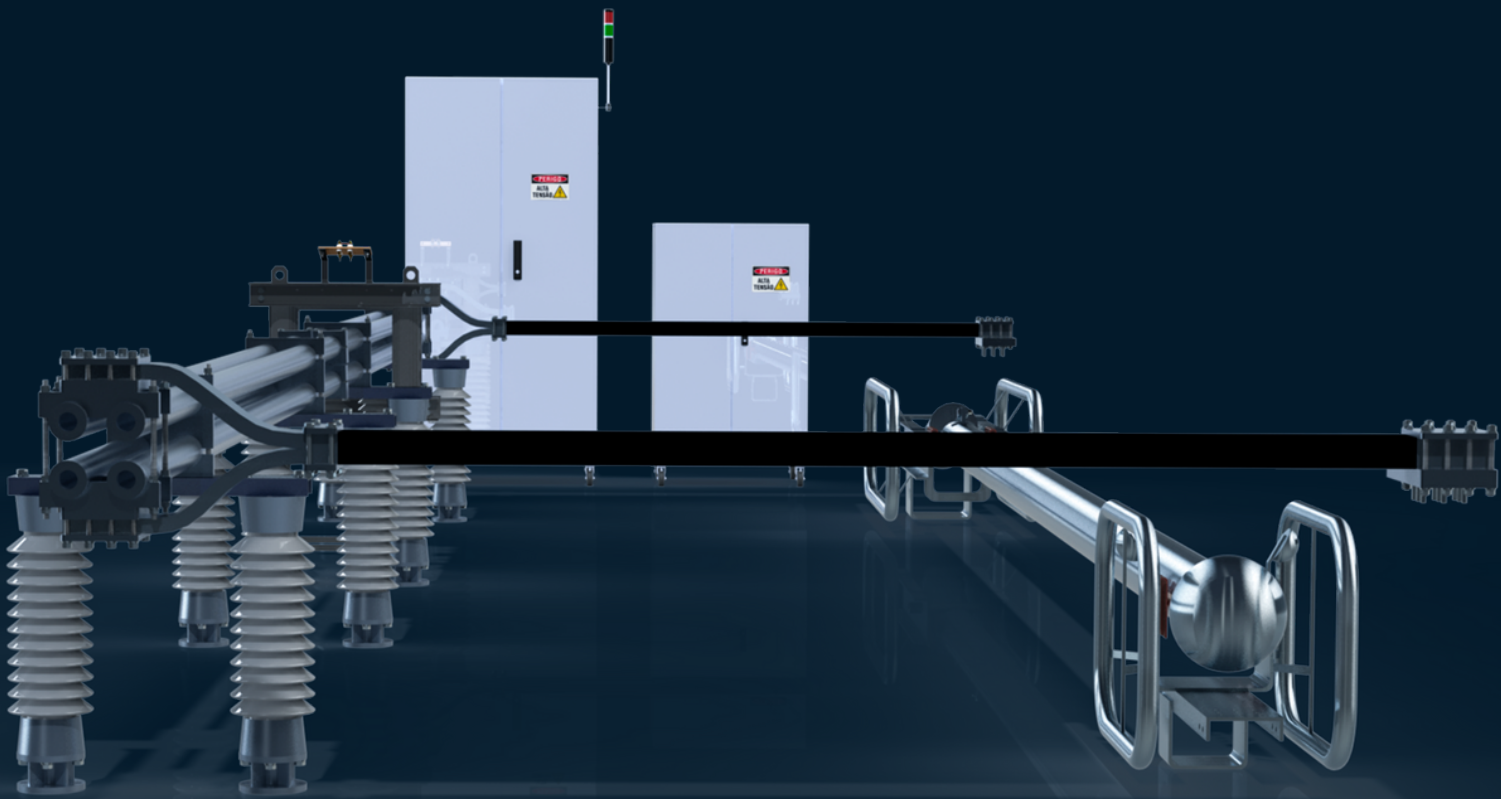


INDUCTION LOOP

# CURRENT INDUCTION LOOP 10KA THERMAL CYCLE



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# INDUCTION LOOP

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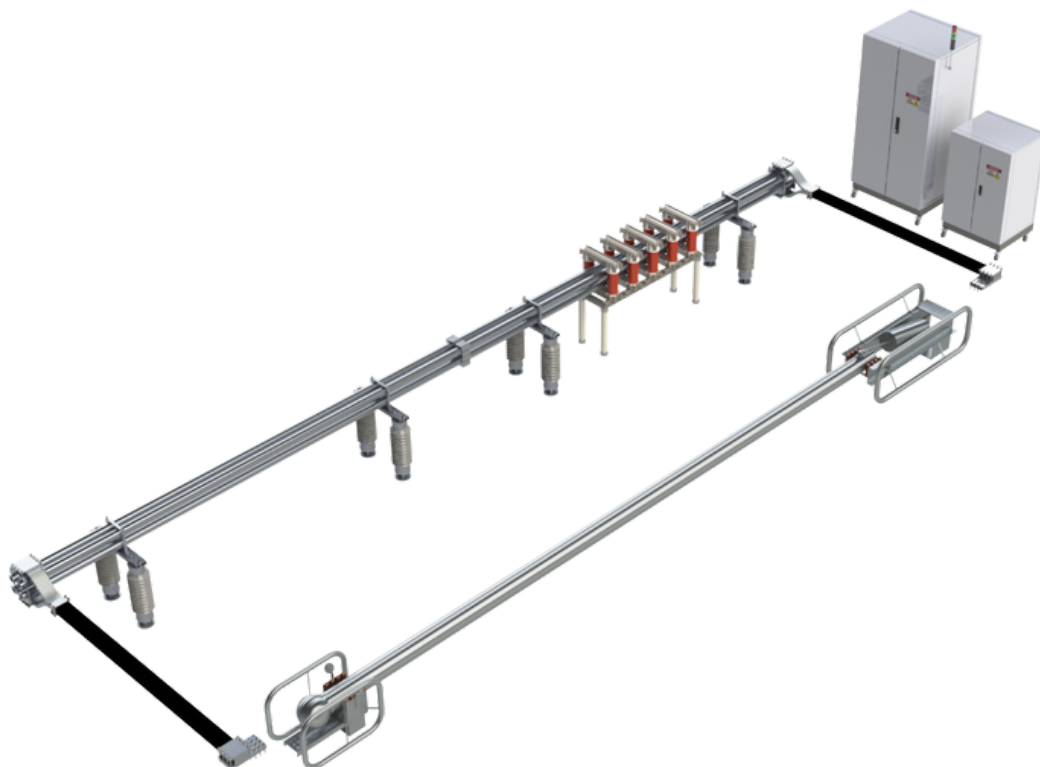
## Description

The current loop consists of a set of functional units that operate simultaneously with the test circuit (active part), comprised of supervisory software, programmable logic controller (PLC), protection and actuation devices (circuit breakers, surge protective devices, relays, and contactors), temperature sensors, data acquisition hardware, and current meters.

Specifically regarding the active part, the circuit is three-phase powered and controlled through a frequency inverter, capacitor banks, and a filter, whose outputs are directed to the step-down transformer, which, in turn, generates the desired current levels for applications of up to 10 kA on the secondary side.

Traditionally, current loops can be constructed from two basic circuits. The first involves the use of a current transformer (CT), where a variable voltage source (voltage regulators or sinusoidal switched-mode power supplies) is connected to the secondary side to produce the current in the conductive loop existing in the primary side of the CT.

HVEX Acquisition is the software for control, activation, and analysis of tests that use the current loop. The software can be used to store information about clients, manufacturers, and equipment, as well as all historical data of tests already performed.



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# INDUCTION LOOP

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## Benefits

### Control and Activation:

Control and activation are centralized in a programmable logic controller (PLC), located within the panel that constitutes the supplied system. The PLC used is of the modular type.

### Hardware and Activation:

Hardware allocated in the control panel of the loop. This unit receives the secondary signals from Rogowski-type current sensors and sends the values via Ethernet to the PLC, which then forwards them wirelessly to the supervisory software that comprises the testing system.

### HVEX Acquisition:

Software for control, activation, and analysis of tests using the current loop. It can be used to store information about clients, manufacturers, and equipment, as well as all historical data from tests already conducted.

### Current and Temperature Measurement:

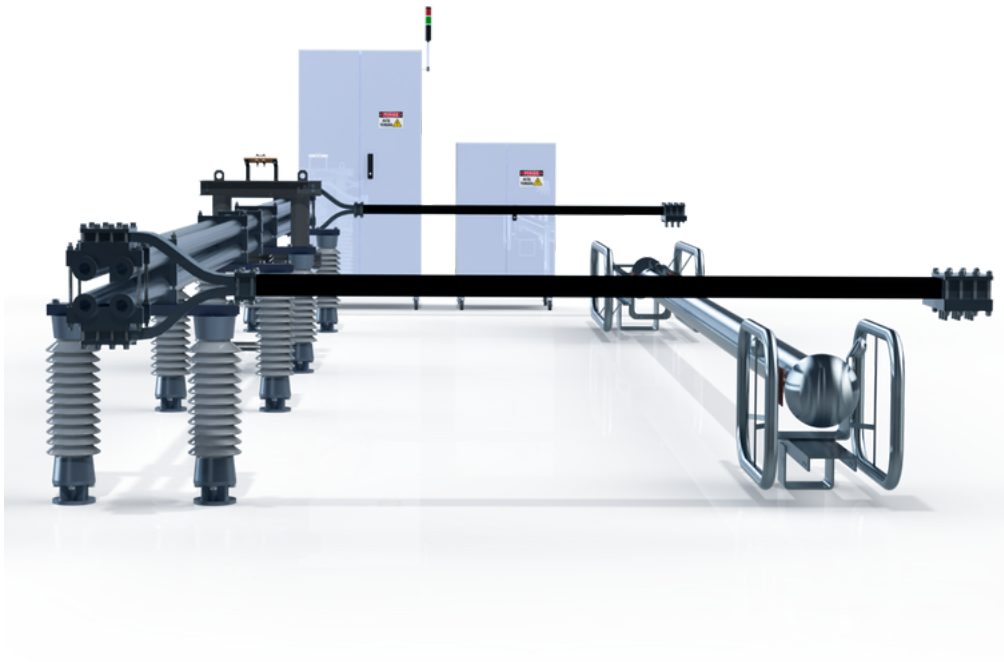
The system integrates current and temperature meters, and their readings are integrated with the supervisory software.

### Current Measurement:

Performed using Rogowski-type current transformers.

### Temperature Sensors:

A total of 32 units are provided for monitoring hot spots on the test object. The placement of these sensors should be defined according to the requirements of each test, so these sensors are flexible and can be allocated to different points on the test object.

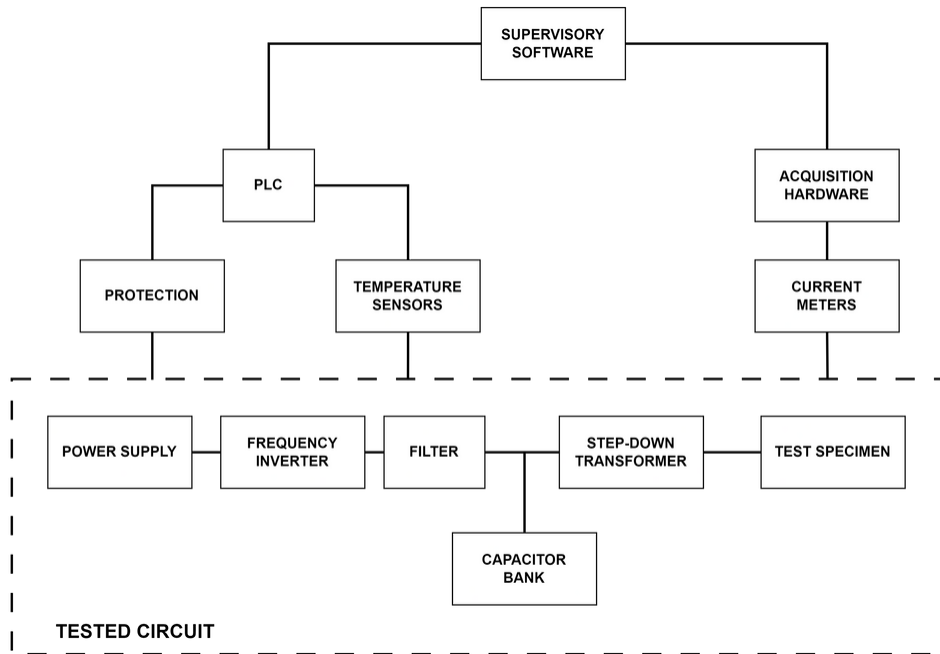


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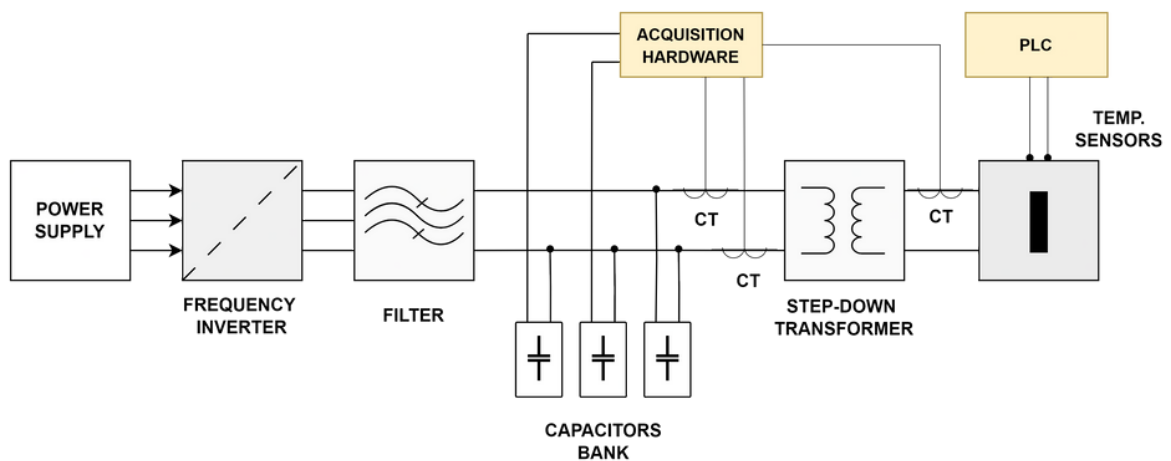
# INDUCTION LOOP

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## Diagram



## Test circuit



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## Technical Specifications

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### Power supply

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Voltage	220 V up to 2 kA and 380 V from 2 to 10 kA
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### Frequency inverter

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Power	30 kW up to 2 kA and 75 kW up to 10 kA
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Rated input voltage	220 V up to 2 kA and 380 V from 2 to 10 kA
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Rated current	78 A to 2 kA and 113 A to 10 kA
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### Capacitor bank

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Power	400 kVAr with all stages activated
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### Induction loop

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Power	150 kVA
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Primary voltage	380 V
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Secondary voltage	24 V Series connection and 12 V Parallel connection
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Secondary current	Maximum 10 kA
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### Rogowski type current transformers

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Transformation ratio	83 mV/kA
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Quantity	1
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## Technical Specifications

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### Temperature sensors

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Type	pt100
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Quantity	32
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### Characteristics of the conductive tube for connection to the test object

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Material	Aluminum
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Length	10 m
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Ground clearance	0,75 m
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### Environmental conditions

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Temperature	0 °C to 45 °C
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Humidity	Up to 95%, non-condensing
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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.



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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