

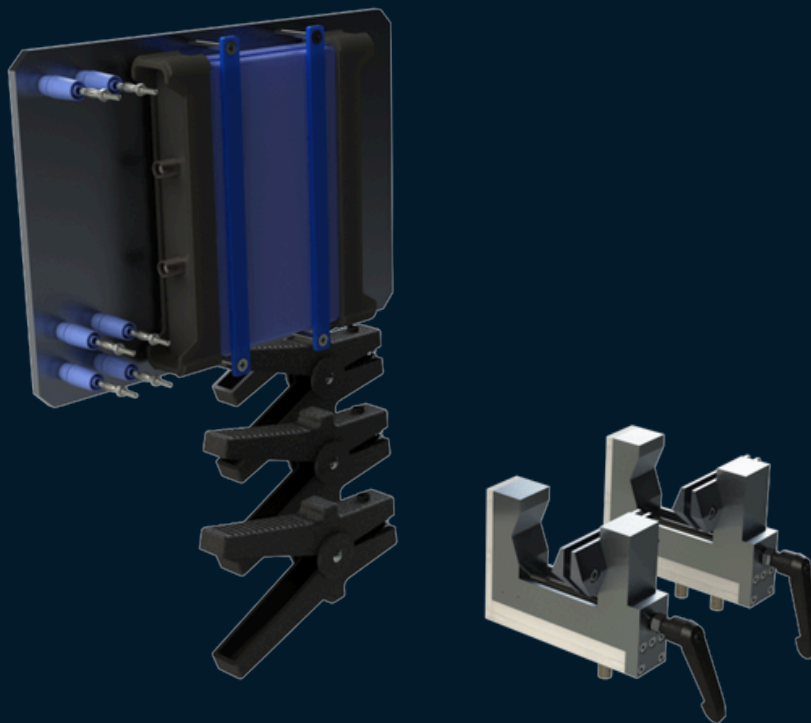
FRA

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## FREQUENCY RESPONSE ANALYZER

Standards

IEEE Std C57.124, IEEE Std C57.113, IEEE Std 1434, IEC 60270, IEC 60060,  
IEEE Std. 400 and NBR 5356



# FRA

## Description

Frequency Response Analysis (FRA) is a technique employed in the analysis of linear systems. It involves presenting the behavior of the analyzed system across a wide range of frequencies.

Measurement techniques for transformer frequency response can be classified into two main groups, according to the philosophy of obtaining the data. These are: time-domain techniques and **frequency-domain** techniques, with the latter being the method used in HVEX's solution.

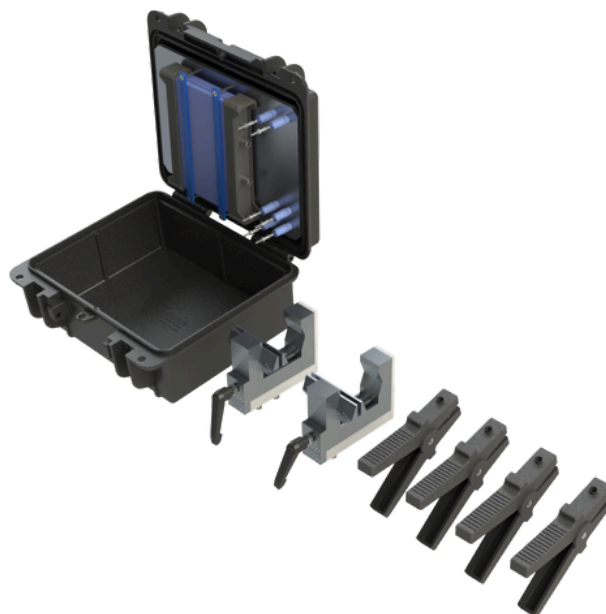
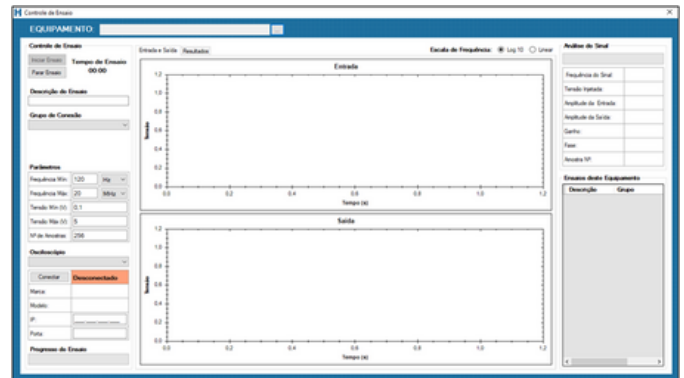
### Types of measurement:

- Spectral signature analysis;
- Open-circuit measurement;
- Short-circuit measurement;
- Capacitive measurement;
- Inductive measurement.

HVEX's FRA testing system is compacted into a mobile unit equipped with an oscilloscope, amplifier, connection terminals, and a computer with supervisory software.

## Analysis Software

**HFRA** is the software used for the control and analysis of Frequency Response Analysis (FRA) tests. Through **HFRA**, it is possible to configure test parameters, visualize graphs, register equipment, generate automatic reports, and manage databases for storing and viewing historical data.



## Technical Specifications

Power supply	127 V / 220 V, 60 Hz	
Function generator	Band width	25 MHz
	Output voltage	20 mVpp to 5Vpp
Amplifier	Power	4 $\Omega$ - 500 Wrms per channel
		8 $\Omega$ - 290 Wrms per channel
	Input sensitivity	775 mV
	Input Impedance	30 k $\Omega$
	Signal/Noise	> 100 dB
	Output voltage	42 V RMS / 60 Vp (Parallel connection)
Software	12 bits	
Operating temperature	Up to 50°C	
Relative humidity	Up to 95% non-condensing	

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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