

# WHAT ARE THE EXISTING METHODS TO TEST OLTCs?

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# WHY VIBRO-ACOUSTIC METHOD?

## RECOGNIZED BY CIGREE AND IEEE

The vibro-acoustic method was developed and tested in the field by Hydro-Québec for over 20 years. Its diagnostic potential has been recognized in two transformer maintenance guides: **IEEE.PC57.143** and **Cigré A2.34**.

## THE TAP-4

The TAP-4, designed for transformers testing, was created in 2008. It became the first portable instrument using the vibro-acoustic method to perform tests on On-Line Tap Changers (OLTC).

Since then, Zensol has also introduced to the market other instruments for OLTC testing: the OTM-X and the TAP-4-PLUS.

## LIKE A STETHOSCOPE

Just like a stethoscope, our units listen to the heartbeat of your OLTC without opening it. They can create a complete overview of the internal state and can detect a wide variety of mechanical and electrical malfunctions.

## ABLE TO TEST ALL OLTCs

Our units are able to test all OLTC types such as: resistor, reactor or vacuum, of any brands (Maschinenfabrik Reinhausen (MR), ABB, Federal Pioneer, Ferranti, etc.).

## RUGGED AND RELIABLE

Their portability and resistance to impacts and extreme climate conditions make them precious and highly appreciated instruments.

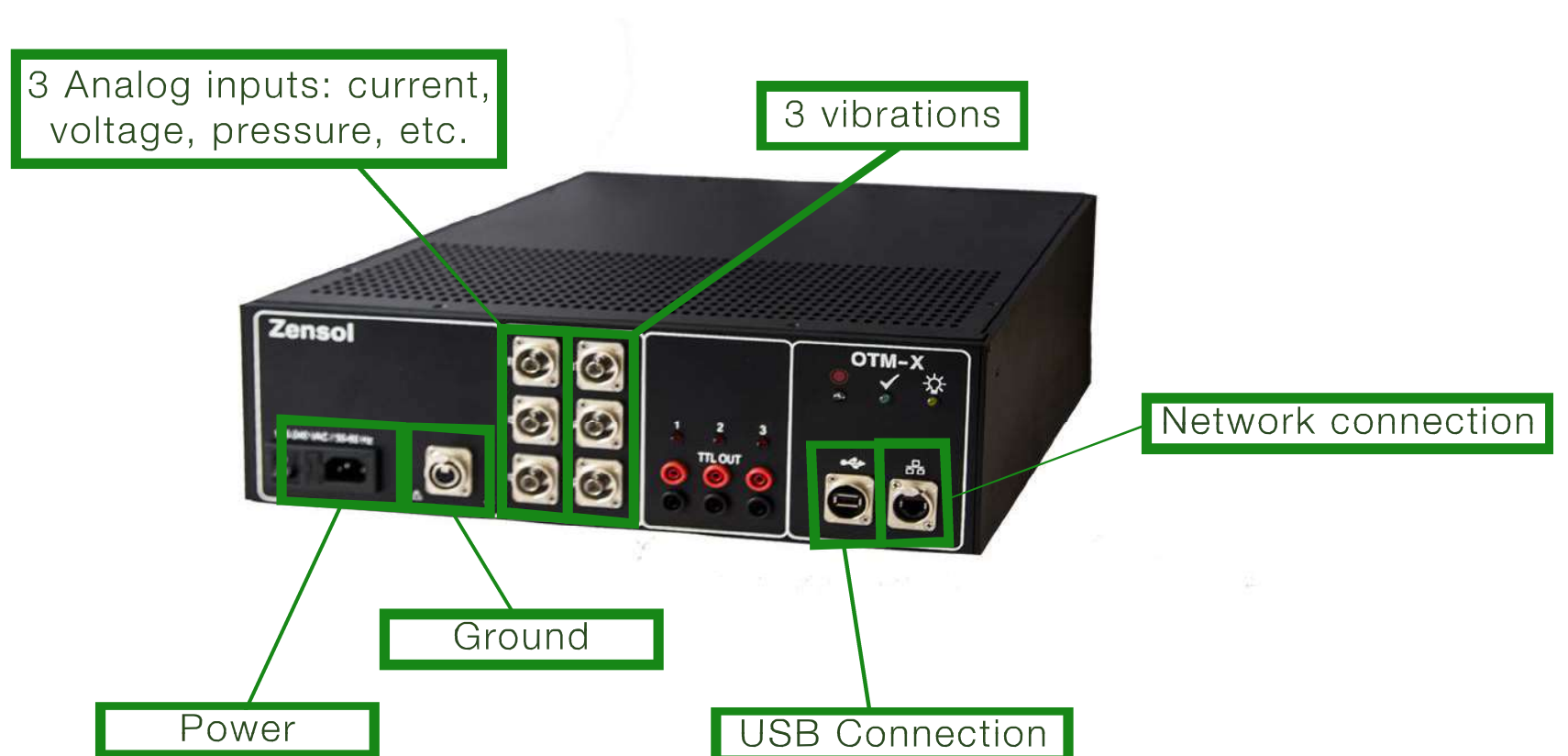
The table on page 4 summarizes the advantages of each testing method.

# WHAT IS THE OTM-X?

## STANDALONE OLTC EVENT RECORDER

The OTM-X is the only standalone recorder on the market using the vibroacoustic method and the motor current test. The OTM-X records every tap change operation, whether the transformer is ONLINE or OFFLINE.

You can access your data wherever you are at any time through the OTM-X's ethernet connection.



# CHARACTERISTICS COMPARISON: TAP-4, TAP-4-PLUS, OTM-X

	TAP-4	TAP-4-PLUS	OTM-X
Sampling frequency	100 kHz	100 kHz	100 kHz and less
Sampling time microseconds (µs)	10 µs	10 µs	10 µs and more
Analog inputs (-10V to +10V)	1	3	3
Accelerometer inputs	3	3	3
External Trigger	YES	YES	YES
Dynamic Resistance capability (DRM)	NO	YES	YES
Standalone	NO	NO	YES

The analysis of vibration signals requires a sampling frequency of at least 100kHz. A lower sampling frequency is unacceptable because the recordings have a poor quality.