

TTR CASE

TRANSFORMER TURNS RATIO TESTER (TTR)



TTR TEST CASE

Description

Transformer Turns Ratio (TTR) measurement systems are designed to allow concise analysis of the transformer turns ratio for power, instrumentation, and distribution transformers, both during the manufacturing process and after a period of use.

The HVEX TTR test case is capable of performing transformer turns ratio measurement tests. In more detail, it is a robust, accurate equipment designed to ensure the reliability and precision of the measurements conducted.

Benefits:

- Single power input and internal standard digital sine wave test source.
- Phase angle measurement function allows for phase angle measurement between high and low voltage sides.
- Capable of measuring the turns ratio and "off-nominal tap" transformer angle.
- Conducts single-phase measurements and performs automatic tests on three-phase windings.
- Simultaneously measures three-phase turns ratio, phase angle value, error, tap position, and tap value.
- The interface offers intuitive and straightforward operation, promoting fast and secure testing.

Operation

The Transformer Turns Ratio (TTR) test, or transformer ratio test, is a routine procedure performed using a specific method to provide or confirm the transformation ratio of a several types of transformer.

This type of test has the capability to verify not only the transformer's turns ratio but also the proper functioning of its windings, including short-circuited turns, tap changer failures under load, and incorrect tap connections.

The TTR test case operates by applying a potential difference between specific points of the connections under test, thereby causing a current to flow. By measuring the transformer's voltage and the response current, it automatically and precisely determines the turns ratio.



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Functions

Tap test:

With the tap test function, the turns ratio (TTR) and TTR measurement error at each tap position can be quickly measured. Instead of repeatedly entering the nominal TTR, it only needs to be input once, and the TTR error at the tap position can be calculated.

Blind test:

With the blind test function, there is no need to choose the connection method and group manually. When measuring (Y/ Δ) and (Δ /Y) transformers, external short-circuiting is unnecessary, and the connection method can be automatically adjusted according to the selected test content.

Transformation ratio measurement:

Includes functions for measuring transformation ratio and TTR voltage measurement.

Test results:

The test results are displayed in numerical format and a hexagonal vector diagram, making the transformer connection group clearly identifiable.

Components

- Equipped with a 5.6-inch LCD screen that provides high-quality data and figure visualization.
- Due to its compact size and reduced weight, the TTR case is easy to transport, facilitating its use in different locations.
- It features a built-in high-capacity rechargeable lithium battery, allowing for testing without relying on an external power source. When fully charged, the battery supports over 500 continuous measurements.
- Includes a printer for printing test results that have been performed and saved in storage.
- It has USB and RS232 ports that provide integration for communication and storage manipulation (upload).



Technical Specifications

Power supply	Internal Battery
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Charge range	100 ~ 240 VAC
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Measurement range (TTR)	0,8 ~ 10000
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Accuracy

HV Side voltage	0,05 %
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LV Side voltage	0,1 %
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Phase angle	0,1°
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TTR (0,9 ~ 200)	0,1 %
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TTR (200 ~ 2000)	0,2 %
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TTR (2000 ~ 10000)	0,3 %
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Structure

Dimensions	320 mm x 240 mm x 130 mm
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Weight	3 kg (6,61387 lbs)
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We provide solutions to improve the efficiency and quality of the power generation, transmission, and distribution sectors. With a highly specialized team experienced in research, development, and innovation, HVEX has been developing tailored solutions for the Brazilian market. We offer a wide range of products with solutions focused on signal measurement and protection transduction.



Boosting the Innovation



☎ 35 3622-2699

✉ contato@hvex.com.br

🌐 www.hvex.com.br

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