Automatic Ratio Tester
Model PATTR-3D

PHENIX TECHNOLOGIES

Testing Applications

The PATTR-3D ratio meter is a high precision instrument, designed to measure turn ratios, phase displacements, excitation currents of single phase and three phase power, distribution and instrument transformers in compliance with IEEE C57.12.90 and IEC 60076 standards.

- **Real 3-phase** test voltage **output**
- Up to **275 Volts** output for **high accuracy**
- Optional **tertiary** winding channel
- **Fully automatic** tap changer **test mode**
- Large **color, sunlight readable,** touch screen display
- **USB** thumb drive and **Ethernet** ports
- **Easy** cable management

Convenience and Performance

- Rugged design is perfectly suited to tackle the most challenging field or manufacturing environments.
- Anti-induction mode strongly enhances the efficiency of the measurements by countering the unwanted effect of nearby induction interference.
- Large, high contrast, color, touch screen display offers easy menu navigation, creation of test plans and viewing of test files.
- Integrated LTC control terminal allows for manual or fully automatic testing sequence of On-Load Tap changers with configurable pulse duration and duty cycle.
- Additional tertiary winding channel saves time, with one-time test connections to primary, secondary and tertiary windings.
- Colored, graphical display of LTC test results becomes available for interpretation in seconds.

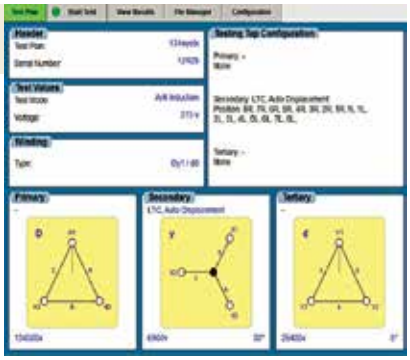
Features

With its real 3-phase test circuit, the PATTR-3D can address complex ratio measurements of Phase- Shifting/ Regulating or irregular vector group type transformers, otherwise impossible to achieve with conventional ratio meters. Zigzag type transformer testing is very easy and will not require the installation of jumpers or the use of relay matrix circuits. The single or real 3-phase voltage output up to 275 V contributes to higher magnetisation currents and therefore stronger flux for better signal reflection on secondary and/or tertiary windings allowing more accurate results. The PATTR-3D phase displacement measurements enables for simple detection of the transformer vector group.

PORTABLE TRANSFORMER

Ease of Use

With PATTR-3D's intuitive menus, high contrast touch screen, convenient graphical test representation, highest test voltage on the market, long and flexible multipurpose test leads configuration, real 3-phase output, the widest range of applicable transformer types, it has never been so simple and easy to achieve high accuracy Transformer Turn Ratio measurements.



Specifications

Ratio range	0.6 to 50000
Ratio accuracy	0.03% from 0.8 to 1000:1 at 275 V 0.05% from 0.6 to 1000:1 with 8 V, 40 V & 100 V 0.1% from 1000 to 5000:1 0.2% from 5000 to 10000:1 0.3% from 10000 to 50000:1
Test voltages	8 V, 40 V, 100 V, 275 V
Power input	100 V to 265 V, 45-65 Hz
Phase angle range	±180 degrees
Phase angle accuracy	±0.05 degree
Phase angle resolution	±0.1 degree
Magnetising current range	Up to 2 A
Magnetising current accuracy	±1% of reading + 1 digit
Measuring time	5 to 10 seconds
Data Storage	> 10,000 test files
Display	Backlight 6.5" LCD, 640x480, Ultra high brightness
Data displayed	• Vector group, phase, tap position, ratio, ratio deviation, phase angle displacement, excitation current, pass-fail results • Up to 3 test files can be loaded simultaneously for comparison • Graphical and tabulated representation of test results
Interface	USB (USB memory drive), Ethernet (remote control)
Tested for	EMI, Safety
Dimensions/Weight (approx.)	55 lbs (25 kgs) 20" (508 mm) L x 16" (406 mm) W x 9" (229 mm) H
Shipping Size (approx.)	60 lbs (27 kgs) 24" (610 mm) L x 21" (533 mm) W x 15" (381 mm) H

Accessories

- Test Leads, 30' (9 m)
- Test Lead Extension, 20' (6 m)
- Tap Changer Cable
- Ground Cable
- Power Cable
- PC Software for remote control
- Calibration Certificate
- Shipping Case (optional)

Easy Storage Cable Design

Easily detach the cables from the common connector for quick and proper storage. Set-up time is also reduced for single phase transformer testing by simply connecting the two required clamp/leads.

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ISO 9001:2008 Compliant