

ETP - 4

Short circuit impedance measurement unit



ETP-4

MAIN FEATURES

- The software program guides the correct connection of the test cables on the primary winding and the short circuits that must be done in the secondary (or tertiary) side, according with the specific connection group the transformer under test has.
- The software program recommends the tap changer positions that should be tested according with the maximum regulation % and the nominal tap.
- Displays and records the current and voltage waveform. This improves the diagnostic capability for further analysis.

DESCRIPTION

The measurement equipment ETP-4 is a unit that automatically performs the following measurements in all type of power, distribution, or instruments transformers:

- Short circuit Impedance measurement.
- Short circuit current at the test voltage
- Short circuit power loss

The unit performs the test in a fully automatic way. The test voltage is generated through a motor driven "variac". This assures the repeatability of the successive tests in terms of the voltage application mode and avoids undesired risks due to sudden transients

APPLICATION

From the information supplied by this test unit it is possible to have an idea about the physical integrity of the transformer under test. The typical problems that are easily detected with this unit are the following:

- Physical displacement of the transformer windings, due to electromagnetic efforts.
- Problems in the iron core
- Transport damages.
- Fixation elements which may be broken.

The program obtains from the measured values the components of the impedance triangle in short circuit. From this information, and its evolution in time it is possible to determine which part of the transformer is being deteriorated.

The test also confirms any incipient problem, which may have been detected with other test equipment that make up the ETP system.

The following types of voltage transformers can be tested with the ETP-4, despite the size and power:

- Power Transformers (single or three phase)
- Distribution Transformers (single or three phase)
- Power Autotransformers (single or three phase)
- Instrument Voltage Transformers.



TECHNICAL SPECIFICATION

The ETP-4 is a fully computer controlled unit and is supplied with its associated software. The software can be installed in any PC with an RS-232 serial com port, as are all the units which are composed in the ETP system.

TEST SIGNAL

| | |
|------------------|--------|
| TEST VOLTAGE: | 0-200V |
| MAXIMUM CURRENT: | 4 A |

VOLTAGE MEASUREMENT

| | |
|------------------|----------------|
| MEASURING RANGE: | 0 to 250V |
| RESOLUTION: | 0,1V. |
| ACCURACY: | ± 2% ±5 digits |

IMPEDANCE/CURRENT RANGES

| RANGE | RESOLUTION. | IMPEDANCE | ERROR |
|-------|-------------|-----------|----------------|
| 0,6A | 1mA | 100 Ω | ±5% ±10 DIGITS |
| 6 A | 10mA | 1 KΩ | ±5% ±10 DIGITS |

OTHER SPECIFICATION

| |
|---|
| <ul style="list-style-type: none"> • Connection group and number of tap changer positions to test are selectable through the computer menu. • Measurement selection among: HV to LV, HV to Tertiary, and LV to Tertiary • On line generation and presentation of the test results on the screen or printed. The test results are automatically recorded in a file, without any intervention of the user. • The ETP-4 is supplied with the necessary three phase test cables, for the primary and secondary connection. These are 8-meter lengths with an optional 12 meter extension lead, enabling to reach all transformer sizes. |
| DIMENSIONS. Portable 19 inches standard 3U.- 12.5 Kg. |

OTHER ASSOCIATED PRODUCTS

| | |
|------------|--|
| ETP-1 | Transformer Turn Ratio Measurement Unit |
| ETP-2 | Recovery Voltage and Insulation Measuring Unit |
| ETP-3 | Winding Resistance Measurement Unit |
| ETP SYSTEM | The total package of all 4 ETP Units. |

DISTRIBUTED BY:

EUROSMC, S.A.

Polígono Industrial P-29, Calle Buril, 69 • 28400 Collado-Villalba. Madrid (Spain) • Tels: 34 - 91 - 849 89 80* • Fax: 34 - 91 - 851 25 53
www.eurosmc.com • e-mail: sales@eurosmc.com