

Automatic impulse voltage routine testing of distribution transformers

SOLUTION

Introducing the problem

Manufacturers of distribution transformers are faced with the problem of testing each transformer with impulse voltages (ANSI/IEEE Standard C57.12.90) to check the manufacturing quality. Often running 3 shifts and 7 days a week, special features are required for the production line test equipment.

Distribution transformer (400 kVA / 400 V)



Impulse Voltage Tests

According to the standards, the basic method for judging the results of impulse tests is the comparison between 2 test wave shapes, a reduced and a full level impulse wave form. The comparison has to be done for different wave forms (full wave, sometimes also chopped wave and front chopped wave). Both the voltage traces (reduced and full level) must match. Also the ground current traces are measured during the impulse voltage test. The superimposition of the ground current traces of full and reduced waves is used as a pass - fail criteria.

Computerised Control System



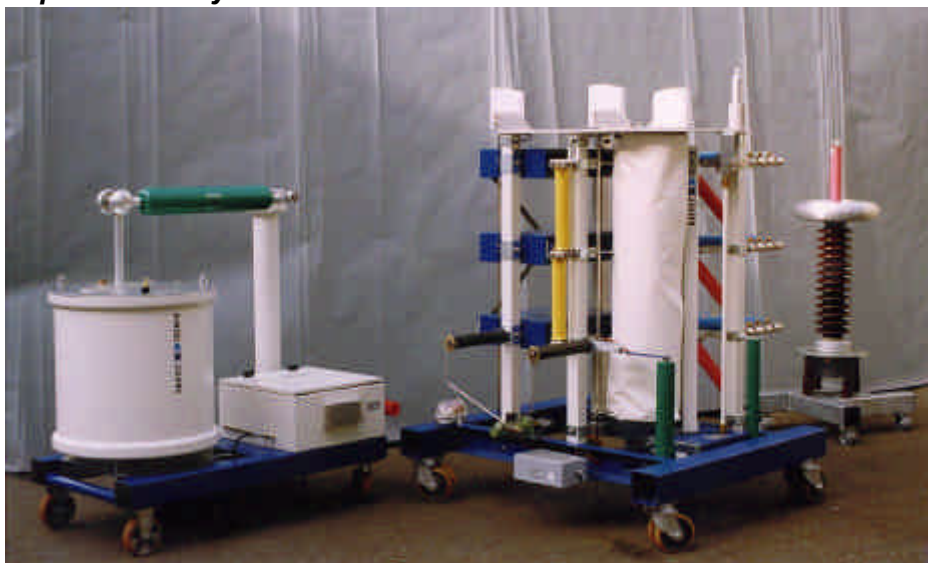
The solution

Haefely Trench AG delivers specially designed impulse test systems for performing the complete impulse voltage test on distribution transformers. The test systems are customised and can be integrated into the production line, being remote controlled by a central host computer. The test equipment can be designed to reach a cycle time of 5 - 10 seconds between the single impulses resulting in a very high throughput.

The generators are laid out for continuous testing in a production environment, 24 h a day. The concept of the computerised impulse test system allows unskilled operators to work with the equipment.

All components of the system are designed specifically for continuous duty and a long life expectancy.

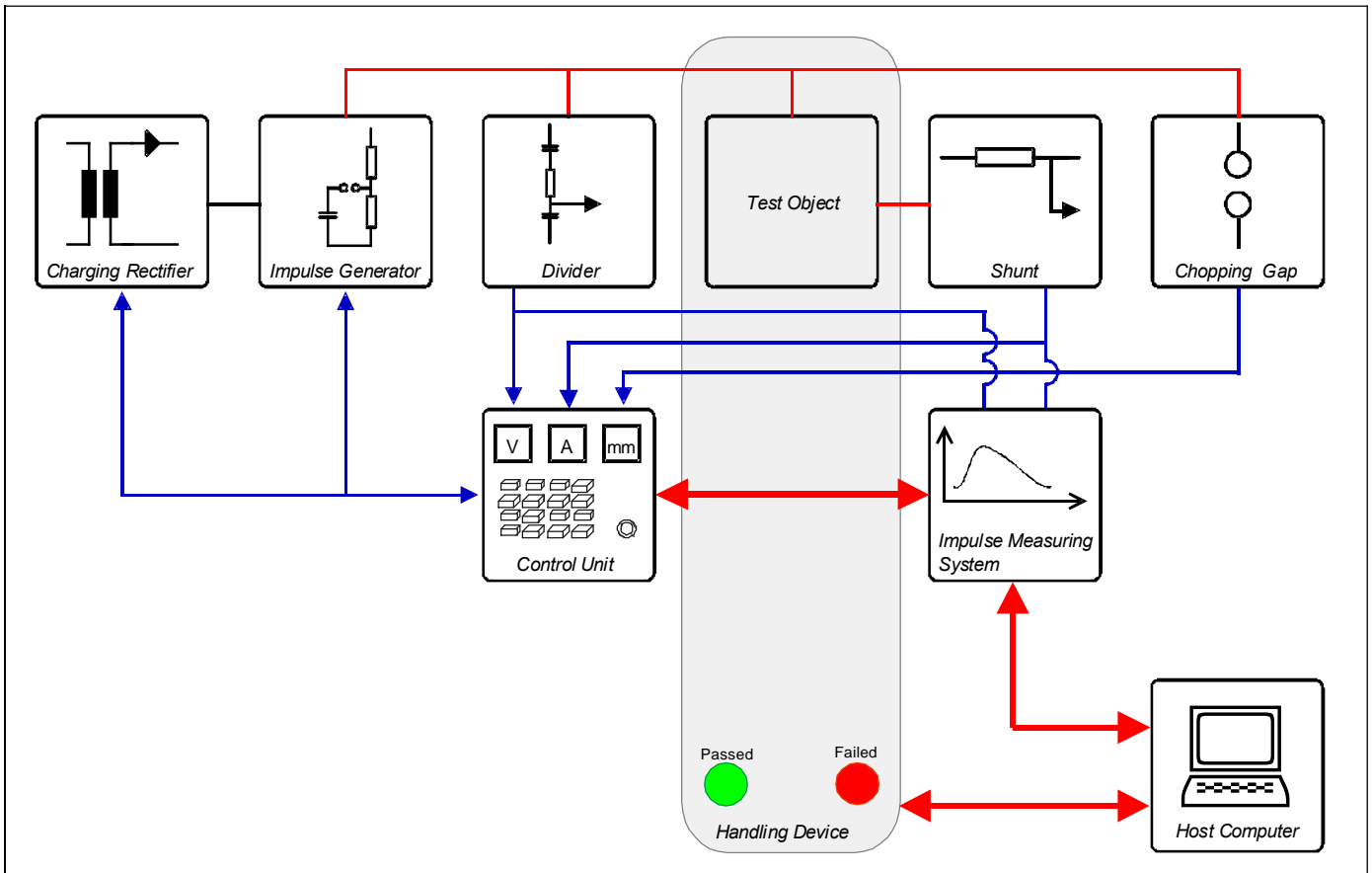
Impulse Test System



Analysing System



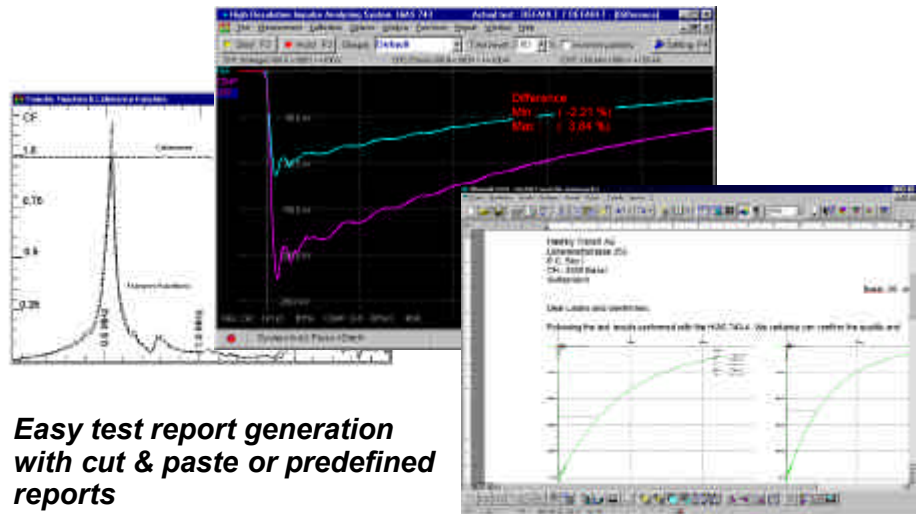
Typical production line impulse test system for distribution transformers



Customer benefit

The use of Haefely Trench test systems gives our customers the following advantages:

- Customised design according to client's specification and applicable standards
- Long life expectancy due to specially designed components
- Lowest cycle time
- Low maintenance
- Automatic report and test certificate generation
- Turn-key system including measurement instruments
- Integration possibility into manufacturing chain
- On-site installation & integration
- High end safety features
- Specialised service crew available world-wide
- possibility for off line high end analysis



Easy test report generation with cut & paste or predefined reports

Haefely Trench AG is the world-leading company in impulse test equipment and has delivered over 800 impulse test systems. We can therefore provide the customer with a huge experience & reference pool.

Haefely Trench AG is your partner providing you specific solutions tailored to your unique test problems.

Haefely Trench AG

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