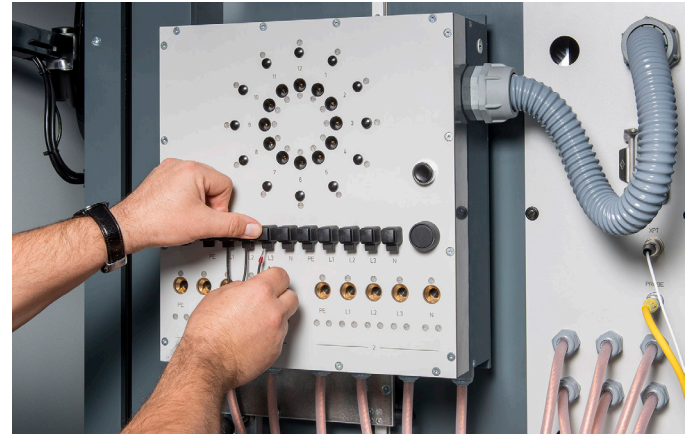


CUSTOMIZED

Industry: Electric motors

Test system for stators



Task

Two test stations were required in order to test the stators before and after impregnating. Two almost identical test stations were set up for this purpose in order to be able to use both stations for both types of tests during peak times. A high level of flexibility was required due to the large variety of DUT.

Furthermore, the following tests were necessary:

- Identification of the north and south poles by means of a polarity check
- Fast testing times
- High flexibility due to a large variety of DUT
- Partial discharge test in the production environment
- Pressure testing of the cooling device in the stator

Solution

Due to the required flexibility, the test system was developed with an universal DUT interface, which made it possible to contact all existing DUT without needing to convert the test station. A solution with a pneumatic clamping system was selected because a short testing time was crucial.

Furthermore, test adapters were developed for the polarity test, which can easily be inserted in the DUT and as a result of their high-voltage withstand strength, do not need to be removed during the test.

A special software tailored to the customers' requirements was programmed in order to guarantee the high level of flexibility. It is easy to create test sequences at the test station and file them in the company network. The correct test sequence is automatically loaded from the company network by the test station with a simple scan of the barcode attached to the DUT and is filled with the correct parameters from a database. Personal safety has priority and is guaranteed by means of a test cover with clamping protection.

A specially developed verification box is used to automatically check the test station at the start. If the verification test is not successful, the test station will not permit any other test.

Advantages

- + Turn-key solution including workplace design, adaptation and software
- + Automatic testing after a one-time connection of the DUT
- + Easy and intuitive operation for trained personnel
- + Test sequences can be created on the test system and filled with parameters from the company network
- + Easy integration in the production line
- + Service-friendly design
- + Short cycle times

Specifications

- Ground bond test
- Insulation resistance measurement: Windings – Housing – Sensors
- High-voltage-test AC/DC: Windings – Housing – Sensors
- 3-phase resistance measurement
- Resistance measurement of the individual sensors
- Surge voltage test
- Partial discharge testing in the case of surge voltage test and high-voltage test
- Polarity test
- Leak test