

CUSTOMIZED

Industry: Automotive industry / electric motors

Test system for e-axes



Task

Stators and E-axes for electric sports cars must be checked for function and safety before installation. In order to be able to test small stators up to complete electric axles, the largest possible test station is required. A complete pre-series test should be realized in this way.

Solution

A test system with a double-leaf safety door was developed. The fully insulated interior offers sufficient space for all kinds of DUT. The safety test technology is housed in a mobile 19"-ESD test cabinet. The contacting is done via test adapters with interfaces for winding and temperature sensors. By scanning a DMC code attached to the DUT, the correct test program is automatically selected from the database.

By closing the door and pressing the start button, the test program is started and runs fully automatically.

- Measurement of the ambient temperature (if necessary the winding temperature)
- Resistance measurement of the windings including symmetry analysis and temperature compensation to 20 °C
- Resistance measurement of the temperature sensors including temperature compensation to 20 °C
- Inductance measurement of the windings including symmetry analysis
- Insulation resistance test of the 3 phases against housing
- High voltage test AC / DC between the 3 phases and housing; Ramp freely adjustable
- Surge test including partial discharge measurement and rotor alignment
- Potential equalization measurement at 5 freely selectable points

Advantages

- + Simple, intuitive operation for trained personnel
- + The DUT only needs to be connected once, the whole test sequence is then performed automatically
- + Parameters and settings can be changed at any time via the software
- + Workplace safety according to EN 50191
- + Large test chamber for test specimens incl. assembly trolley with high weight / large external dimensions

Specifications

- Surge test up to 6,000 V DC
- Partial discharge measurement during HV and surge test
- Partial discharge measurement according to IEC
- Insulation resistance test DC 100 – 6,000 V
- High voltage test AC 100 – 5,500 V
- High voltage test DC 100 – 6,000 V
- Sensor for temperature compensation
- Internal dimensions test station (HxWxD) 2,000 x 1,600 x 1,800 mm