

## Innovations of MEG measurement unit (AP21 board)

### **HV-AC partial discharge test:**

The HV-AC partial discharge measurement is a diagnostic method for detecting insulation defects. By capturing high-frequency signals, it enables early fault detection and helps ensure operational reliability.

### **Repeated pulsed surge voltage to detect partial discharge (PDIV, PDEV, RPDIV, RPDEV):**

This test evaluates the insulation condition by applying repeated high-voltage impulses. It determines parameters such as Repetitive Partial Discharge Inception Voltage (RPDIV) and Repetitive Partial Discharge Extinction Voltage (RPDEV).

**Integrated inductance measurement:** The introduction of an additional electrical characteristic of inductance significantly expands the detection range. This allows for precise conclusions about defects in the wound wire and the material core.

**Dynamic relay switching:** For even more flexibility – regardless of the complexity of the winding scheme. Thanks to dynamic relay switching, measurement configurations are adjusted in real-time to the position of the test object.

**Onboard RFID:** Already established in our machines, the RFID system is now integrated onboard without the need for additional external hardware or software. This minimizes application errors as the inserted test head is automatically detected.

**Optimized measurement times:** Compared to the previous model AP11, measurement times have been reduced by 40-80%, depending on the measurement.

### **Previous measurements with the AP11 measurement board:**

- Hot Staking/Welding Resistance
- Coil Short Circuit
- AC/DC High Voltage Measurement
- Coil/Diametrical Resistance
- Insulation Testing

## Software innovations (APW3):

- Backward compatibility with hardware up to AP11
- Modular and flexible test flow, customizable to individual requirements
- Expandable through plugins, e.g., Python integration:  
Individual calculations and data can be processed and reintegrated into the testing software, while maintaining the flexibility of Python.
- Digital signal processing (DSP) of CSC pulse (only with AP21 hardware):  
Enables the evaluation of additional characteristics of CSC pulse.
- Customizable HT measurement configurations (only with AP21 hardware).