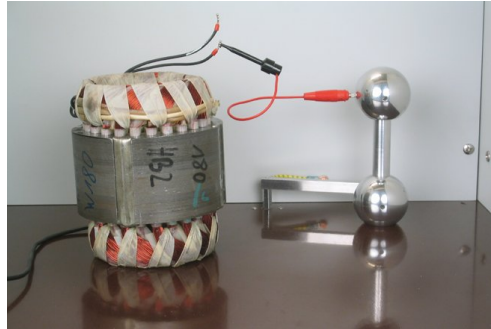


Applications - Quality Control



Partial discharge test cabinet for stator coils of small induction motors

Partial discharge testing – well established for high voltage equipment – becomes increasingly important for insulation systems of a lower voltage level. Changing to switching power supply and to IGBT control of induction motors, for instance, raise demands and testing needs for the insulation system. The modular concept of Power Diagnostix' instruments allows offering customized solutions for automated and semi-automated testing.

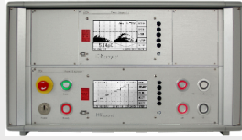
Modular Concept

Different levels of automation can be provided depending on the testing needs. In case of full production testing a high level of automation and simple go/no go decision is needed,



whereas manual control offers a higher level of flexibility when testing samples or sample variants during development. Generally, such test arrangement consist of a test chamber with a built-in high

voltage transformer and instruments to control and measure voltage and partial discharge. The setup includes the safety interlock, automated grounding system, and over-current protection. Different levels of automation are offered combining the HVcontrol, the basic HVcompact for voltage measurement or the STEPcompact for programming voltage steps, ramps or more complex functions. Installed on an industrial PC, the HVpilot software then optionally controls these instruments and the ICMcompact for the PD signal and automatically prepares the test report. Additionally, Power Diagnostix designs special test fixtures, dual test chambers for increased performance, and customer specific software. Alternatively, of course, such instruments can be used to modernize the control of an older high voltage transformer and its regulating transformer.



Control and measurement



TCU7,5



HV test room

Levels of Automation

Depending on the needs the instruments and controls can be compiled in different versions:

Level A:

Partial discharge test bench for sample testing consisting of a test chamber and manual voltage control equipped with an *ICMcompact* for PD measurement with voltage option or an *HVcompact* for voltage measurement.

Level B:

As level A, but with the *STEPcompact* instead of the *HVcompact* for automated voltage control.

Level C:

As above, but with an industrial PC and the *HVpilot* software for fully automated control and test report generation.

Level D:

Modernization of test rooms using *HVcontrol*, *HVcompact* or *STEPcompact*, and *ICMcompact*. Software control as with level C.

Typical Packages

Test set-up (like level C) consisting of:

- 1 x *ICMcompact* with gating
- 1 x *STEPcompact*, 19" rack
- 1 x Test chamber 19", 18HU, incl. 10 kV voltage transformer, regulator, manual control buttons, horn, lamps, emergency stop, grounding system, coupling capacitor, ...
- 1 x Industrial PC
- 1 x Software *ICMcompact*
- 1 x Impulse calibrator CAL1A
- 1 x Preamplifier RPA1
- 1 x Set of cables



Typical test set

Type	Voltage	Power	Current	Connection	Height	Dimension WxHxD
TCU 3	0-230V	3kVA	16A _{max}	CEE 400/16A (L-N)	9HU	553 x 506 x 600 mm
TCU 7,5	0-230V	7,5kVA	34A _{max}	CEE 400/32A (L-N)	9HU	553 x 506 x 600 mm
TCU 10	0-230V	10kVA	48A _{max}	CEE 400/63A (L-N)	9HU	553 x 506 x 600 mm
TCU 10/2	0-400V	10kVA	25A _{max}	CEE 400/63A (L1-L2)	9HU	553 x 506 x 600 mm
TCU 15/2	0-400V	15kVA	38A _{max}	CEE 400/63A (L1-L2)	25HU	553 x 1218 x 600 mm

Partial discharge testing is increasingly applied for testing insulation systems of lower voltage levels. Power Diagnostix offers ready-to-use test chambers for easy and safe partial discharge testing on components and small samples.