

Transformer Insulation Diagnostics – DC, AC, offline and online assessment

This course describes the most important methodologies used for transformer insulation diagnostics in the factory and in the field. The topics include time and frequency domain methodologies described in the international literature including insulation resistance, Dielectric Frequency Response and Partial Discharge Testing.

Course Outline:

Module 1 – Time Domain Dielectric Response

- Transformer Insulation Resistance
- Factors affecting IR testing
- Recommended practices including use of guard

Module 2 – Frequency Domain Dielectric Response

- Power frequency and 1 Hz power factor (dissipation factor or $\tan\delta$) assessment
- Dielectric frequency Response for HV bushings
- Dielectric frequency response for HV Instrument Transformers

Module 3 – Partial Discharges

- PD testing on power transformers from the factory to the field
 - Applicable testing standards and test procedures during FAT
 - challenges in test rooms and how to solve
 - PD failure investigation strategies and in-depth pattern analysis
 - Acoustic PD fault location
 - Onsite PD testing, what is different
 - Online PD monitoring

Who Should Attend?

- Engineers and Field personnel responsible for the planning and execution of testing practices in the field
- Asset managers, operation managers responsible for condition assessment of critical components in the electrical system
- Industry experts looking at new technological tendencies in the field testing arena
- Consultants who are looking for more advanced and efficient tools to assist and support their customers

Key Benefits:

Upon completion of this course, attendees will be able to:

- Identify the requirements to perform an efficient and safe test procedure in the field
- Understand the challenges encountered in the field for transformer field assessment
- Properly analyze the test data from the field
- Make proper use of advanced features in power factor technology
- Apply sound technical decisions related to transformer insulation diagnostics

Duration and Price:

- 4hours
- \$70

Register now:

On-line: [EIC 2025 Registration](#)

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If you have any questions regarding Short Courses please contact: Inna.Kremza@voith.com



Dr. Diego Robalino is the Global Industry Director Transformers at Megger. He specializes in diagnosing complex electrical testing procedures and strategically developing state-of-the-art transformer testing technology, with a career spanning over 25 years. Diego is a CIGRE USA member, and IEEE Senior Member, a member of the IEEE/PES Transformers Committee serving as Secretary of the Dielectric Testing Subcommittee, a certified Project Management Professional with the Project Management Institute (PMI), and the General Chairman of the IEEE/DEIS 2020 and 2022 Electrical Insulation Conference.

He is the author and co-author of over 50 technical articles on power, distribution, and instrument transformer condition assessment. Diego received his Ph.D. in Electrical Engineering from Tennessee Technological University while researching power system optimization, focusing on aging equipment.



Markus Söller Dipl.-Ing., Managing Director, Megger PD Aachen, finished his studies at the technical university in Aachen (RWTH) as electrical engineer in 1997. He provides 27 years of practical experience in measuring and analysing partial discharges in HV laboratories and in the field on various HV equipment such as transformers, rotating machines, MV & HV switchgear and cables

Markus is an active Member of CIGRE, IEEE and VDE. Working Group activity include: WG D1.66 (Requirements for PD monitoring systems for GIS) and IEEE C57.143 (Transformer Monitoring). He is the author and co-author of various published papers. His main activities include: general management, business development, technical support, product management, measurements and trainings, exhibitions & conferences.