



DIAGNOSTICS OF TRANSFORMERS

PRECISE CONDITION ASSESSMENT FOR PRECISE DECISIONS.

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YOUR ONE-STOP SHOP: COMPREHENSIVE TEST PORTFOLIO FOR TRANSFORMERS.



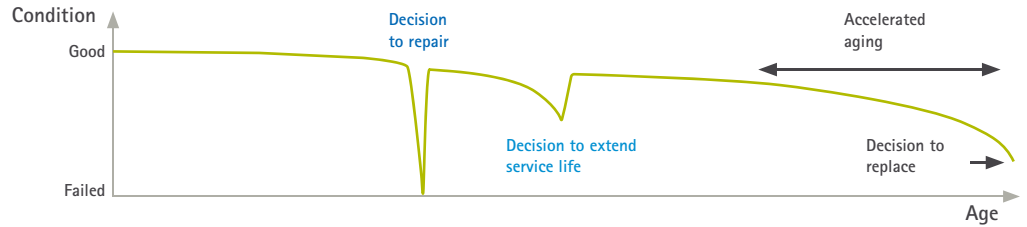
OIL ANALYSIS

Oil diagnostics are a fast, easy and inexpensive option for early detection of abnormalities developing in a transformer or on-load tap-changer.

OIL ANALYSIS	ACTIVE PART				COMPONENT			APPLICATION					
	Insulating oil	Cellulose insulation	Windings	Core	Tap changers	Bushings	Cable terminals compartment	Routine monitoring	Oil condition	Failure investigation	Condition assessment	Conformity/commissioning	Special measurements
Dissolved gas analysis		■	■	■	■	■	■	■		■	■	■	
Moisture content	■	■			■	■	■	■		■	■	■	
Breakdown voltage	■				■	■	■		■	■	■	■	
Dissipation/power factor	■								■		■	■	
Acidity	■								■		■	■	
Interfacial tension	■								■		■	■	
Visual inspection	■								■		■	■	
Color index	■								■		■	■	
Particle count	■								■	■	■	■	
Inhibitor content	■								■		■	■	
Solids content/sludge	■		■								■	■	
Oxidation stability	■										■	■	
Furan analysis		■	■								■		
Methanol/ethanol		■	■								■		
PCB content	■										■	■	
Total sulfur/corrosiveness		■			■						■	■	
Density	■											■	
Viscosity	■											■	
Flash point	■											■	
Pour point	■											■	
Contaminants	■											■	
Metal passivator content	■				■								■
Permittivity/resistivity	■												■

Other tests available on request

Life cycle of a transformer



Routine monitoring	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Oil condition		■		■		■		■		■		■		■		■		■		■		■		■		■	
Routine electrical tests			■			■			■			■			■			■			■			■			■
Fault analysis																	■										
Detailed condition assessment																	■										



ELECTRICAL TESTS

A selection of electrical measurements can be used to identify abnormalities and introduce adequate countermeasures.

ELECTRICAL TESTS	ACTIVE PART				COMPONENT	APPLICATION						
	Insulating oil	Cellulose insulation	Windings	Core			Tap changers	Bushings	Cable terminals compartment	Routine electrical tests	Failure investigation	Condition assessment
Winding resistance			■		■	■	■	■	■	■	■	
Dynamic resistance measurement (DRM)			■		■			■	■	■	■	
Insulation resistance			■	■				■	■	■	■	
Transformation ratio/phase angle			■		■			■	■	■	■	
Capacitance	■	■	■	■		■		■	■	■	■	
Dissipation/power factor	■	■				■		■	■	■	■	
Vibroacoustic measurement (VAM) and motor current					■			■	■	■	■	
Short-circuit impedance (leakage reactance)			■						■	■	■	
Excitation current			■	■					■	■	■	
Sweep Frequency Response Analysis (SFRA)			■	■					■	■	■	■
Frequency Domain Spectroscopy (FDS)	■	■				■				■	■	
Polarization/depolarization current (PDC)	■	■				■						■
Demagnetization				■								■
Frequency response of stray losses (FRSL)			■									■
Partial discharge			■	■	■	■	■	■				■

Other tests available on request

MORE POWER. MORE VALUE.

More than just data.



More knowledge about the transformer

- Thanks to our decades of experience, we provide a well-founded interpretation of the measured values along with clear, practical recommendations for action
- In the area of tap-changer diagnostics, our specialists have comprehensive expert knowledge that is unsurpassed by anyone else worldwide.



Your one-stop shop

- We provide the entire measurement portfolio and corresponding services for power transformers from a single source
- In addition to oil analyses and electrical tests, we also provide a detailed visual inspection and infrared thermography



Get more out of your transformers

- Our experts provide you with a comprehensive and independent assessment of the condition of your transformers as a basis for making maintenance and investment decisions
- Extend the service life of your transformers through suitable optimization measures and a condition-based maintenance strategy



Benefit from our service network

- Worldwide MR service network
- Can be reached 24/7 and support is quickly on site

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THE POWER BEHIND POWER.

