

FREQUENCY DOMAIN INSULATION SYSTEM DIAGNOSIS DAC-FIND-2 FIND

- Insulation evaluation of High Voltage Rotating Machines.
- Evaluation and assessment of Magnet Wire degradation.
- Electrical Characteristics and degradation evaluation of Lubricating oil for vehicles.



- **Single measurement enables evaluation of insulation.**
No need to compare past data to analyze insulation degradation factors.
- **Compact • Light weight • Battery-powered.**
Easy on-site measurement with a single unit.
- **No specialized expertise is required.**
The state of insulation is clearly analyzed.

APPLICATION :

Insulation diagnosis of High Voltage rotating machines

Determine the deterioration state in a single test.

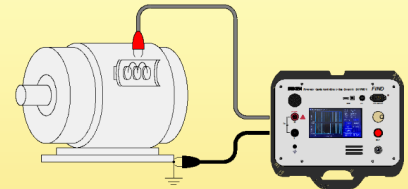
■Frequency Response Trends due to degradation factors.

[In a state with moisture absorption]

- Capacitance increases at lower frequency.
- The maximum value of $\tan \delta$ shifts to higher frequency band.

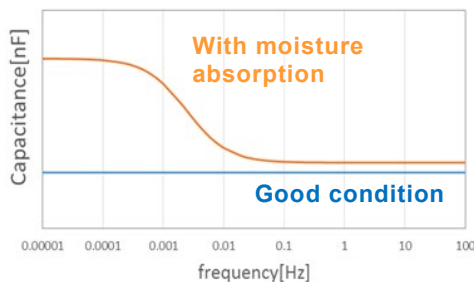
[In a state with Surface Contamination]

- Capacitance does not change with frequency.
- A steep rise in $\tan \delta$ is observed at lower frequencies.

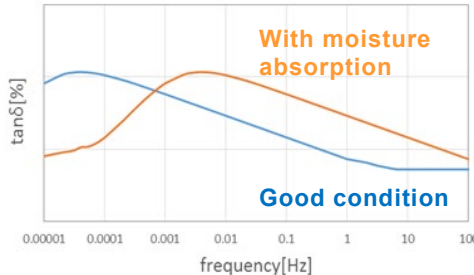


Moisture absorption

Frequency Response of Capacitance

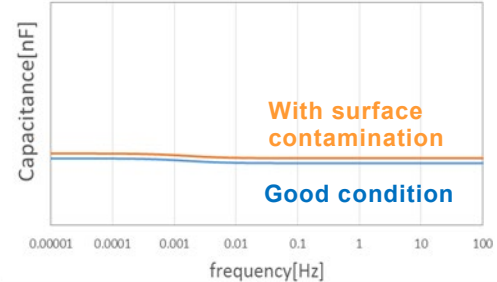


Frequency response of $\tan \delta$

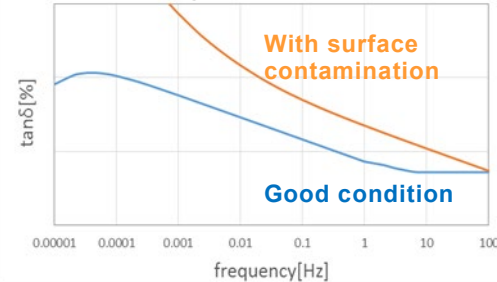


Surface contamination

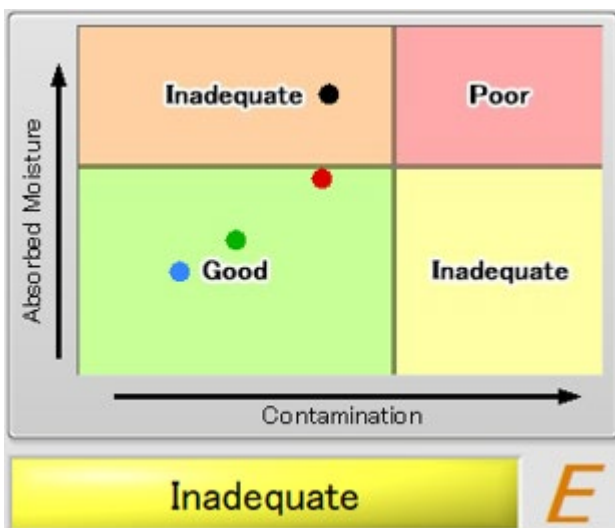
Frequency Response of Capacitance



Frequency response of $\tan \delta$



■Analysis with software



Based on the analysis results, the degree of moisture absorption and surface contamination are displayed in a scatter plot, and the overall evaluation is output in 7 levels from A to G.

APPLICATION :

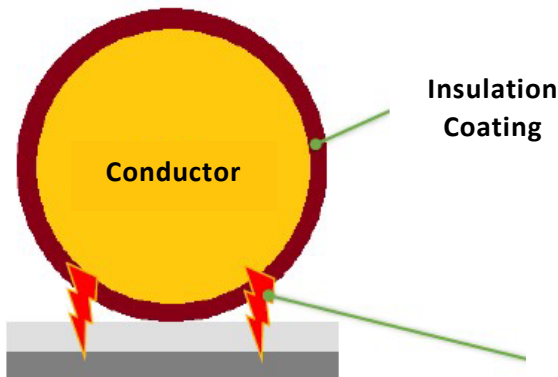
Magnet Wire Degradation Assessment

A new approach to diagnosing enameled wires.

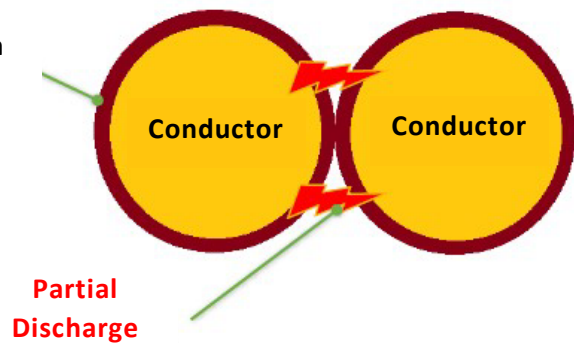
■ Deterioration of magnet wires due to Partial Discharge.

The occurrence of Partial discharge accelerates the degradation of the insulation coating.

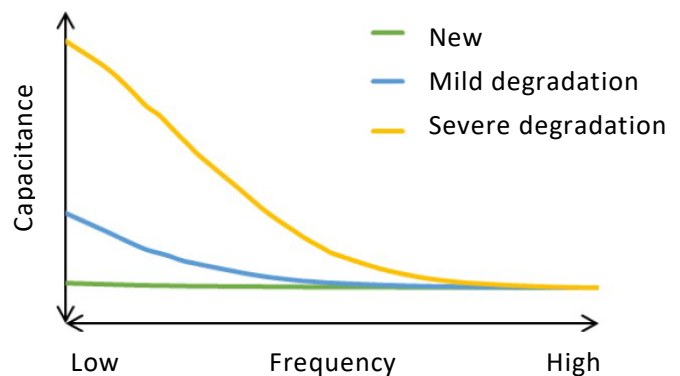
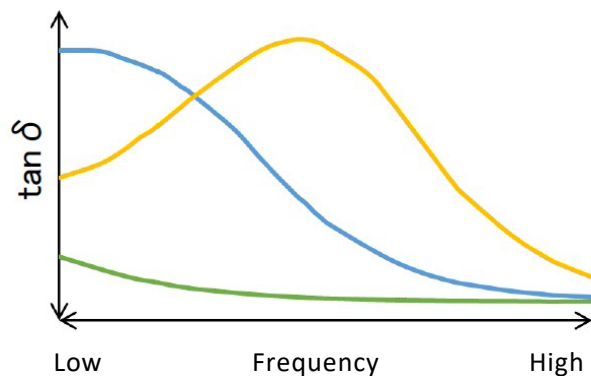
PD in Phase-to-Ground



PD in Phase-to-phase



■ Capture degradation progression by characteristics at low frequencies.



APPLICATION :

Safety Evaluation of Lubricating Oil for Vehicles (EV, HEV).

Electrical evaluation of lubricating oil, Hydraulic fluids, and Oil additives.

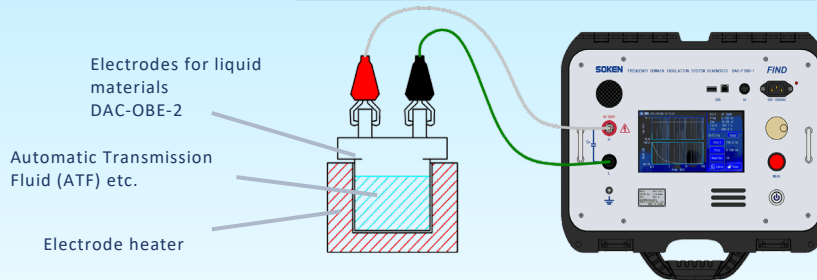
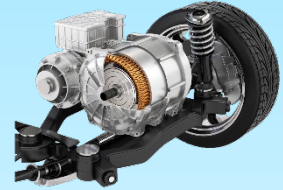
■ Electrical properties required for lubricants.

- ☐ Low dielectric constant, high volume resistivity and high withstand voltage are required.
- ☐ Stable electrical characteristics over a wide temperature range is required.



■ Advantage of measuring Lubricating oil with *FIND*.

- With test voltage as high as 200Vrms, *FIND* can evaluate dielectric and insulation properties in a state close to the operating conditions.
- *FIND* supports $\tan \delta$ up to about 1000%, enabling temperature testing of Lubricating oil.
- Designed for motor measurement, *FIND* can evaluate the insulation structure of a motor containing lubricating oil.



SPECIFICATIONS

NAME : Frequency Domain Insulation System Diagnosis

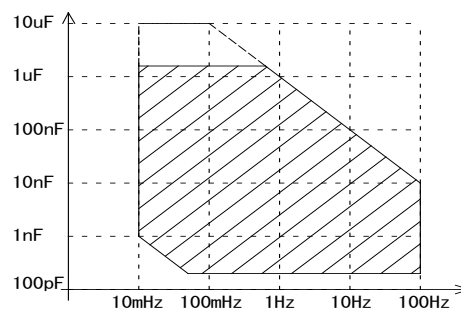
MODEL : DAC-FIND-2

Capacitance	Measurement range	300pF to 2μF
	Display	4 digits
$\tan \delta$	Measurement range	0.01 to 999.9%
	Minimum resolution	0.01%
Test power	Frequency	10mHz to 100Hz
	Voltage	200Vrms, 20Vrms
Input power	Battery	Ni-MH 12V 4200mAh 4 hours continuous drive
	AC adaptor	AC100 to 240V
Measurement mode	Grounded-Specimen-Test (GST Mode) Un-grounded-Specimen-Test (UST Mode)	
Size and weight	W394 x D307 x H173 (mm) about 7kg	



Measurement range

Frequency	Capacitance
10mHz	1nF – 2μF
100mHz	300pF - 2μF
1Hz	300pF – 1μF
10Hz	300pF – 100nF
100Hz	300pF – 10nF



ISO9001:2015
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