



Transient Earth Voltage Sensor

TEV sensor can be magnetically attached to the outer surface of the metal-clad switchgear, typically on cable boxes or next cable boxes or next to cable termination, to detect TEV signal representing PD inside. Then, TEV signals can be measured by an oscilloscope to obtain partial discharge pattern. The results revealed that each defect has own characteristic that differs from each other.

How does iTEV work?

Partial Discharge (PD) is one of symptom that occur due to defect on the high voltage insulation system. PD measurement is needed to monitor the condition of equipment and avoid the failure. PD occurring inside the metal box would emits electromagnetic (EM) wave in wide frequency that propagates and leaks to the outside exciting the surface current on the metal wall and then producing transient earth voltage (TEV) as a result of current and impedance of the material. TEV sensor is mounted on the surface of the metal box to detect TEV signal representing PD inside. Then, TEV signals can be measured by an oscilloscope to obtain partial discharge pattern. The results revealed that each defect has own characteristic that differs from each other. PD with larger magnitude generated higher of TEV signal. Based on experimental results, PD measurements using TEV sensors, can be further developed, not only for measuring PD magnitude, but also can obtain a phase resolved PD pattern. Therefore, it can be used to estimate the type of PD that occurs in the equipment.

Technical Specification

Model	iTEV
Type	Capacitive
Recommended Load Impedance	50 Ω
Bandwidth	3 ~ 60 MHz
Measurement Range	-40 - 60 dBmV
Resolution	1 dB
Output Connector	BNC
Weight	100 g
Dimensions	60 mm x 60 mm x 35 mm
Installation	Permanent Magnet



ASSISTS IN THE DETECTION OF PARTIAL DISCHARGE ACTIVITY IN METAL CLAD SWITCHGEAR, CONNECTION BOXES AND THROUGH TRANSFORMER TANK WALLS

- Detect voltage spike generated from the metal casing of HV equipment.
- Locate PD source in HV equipment by the amplitude of transient earth voltage.
- Magnetically attached to the outer surface of metal clad of HV equipment.
- Suitable for oil-immersed transformers, HV switchgears, and GIS PD detection.
- The response rising time of pulse for PD detection can reach the nanosecond level.



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