High voltage coupling capacitor experimental method

What is a coupling capacitor (C C)?

A coupling capacitor (C C) is a very common coupling method when performing a PD measurementas described in the IEC 60270 standard. When a partial discharge event occurs,the coupling capacitor provides the devices under test (DUT) with a displacement current,which is measurable at the coupling devices (CPL).

Does coupling capacitance matter for high precision electronic voltage transformer?

High quality power is the prerequisite for high precision measurement of an electronic voltage transformer. In order to ensure a compact structure and stable operation of the transformer, this paper proposes a circuit and high voltage energy harvest of high precision electronic voltage transformer based on coupling capacitance.

How does a coupling capacitor measure a partial discharge?

When a partial discharge event occurs,the coupling capacitor provides the devices under test (DUT) with a displacement current,which is measurable at the coupling devices (CPL). Such an approach provides additional information about the test discharge (PRPD) measurement. OMICRON ofers standard coupling capacitors from 12 kV up to 100 kV.

How do you measure a coupling capacitor discharge (PRPD)?

discharge (PRPD) measurement. OMICRON ofers standard coupling capacitors from 12 kV up to 100 kV. When using a coupling capacitor without an integrated measuring impedance, the low side of the coupling capacitor has to be connected to the input of the CPL measuring impedance (basic test setup with measurement on ground potential).

What is the difference between coupled capacitive high voltage energy harvest method?

The main difference between coupled capacitive high voltage energy harvest method and traditional methodsare: 1. The traditional energy harvest circuits are voltage-based power sources. The defect of traditional methods is that the voltage has fluctuations when server turbulences occur in the power grid.

What is the transformer ratio of capacitor C L?

As the dc voltage of capacitor C L could be 300 to 700 V,so a transformer ratio 20is selected to ensure that the secondary voltage will not be below 15 V. Load filter capacitance is used to filter the interference signals,a minimum 470uF is recommended.

Coupling capacitors are used for the decoupling of PD current pulses together with measuring impedances placed in series in standard measuring circuits to convert into voltage pulses for analysis with a PD detector according to IEC 60270. The coupling capacitor also acts to drop the test voltage to a safe, measurable value.

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Coupling capacitors are provided in series with output of a stage and input of next stage to block effect of DC voltages to be passed on. A capacitor has high impedance to low frequencies and blocks them, and allows high frequencies to pass to next stage. Value of coupling capacitor depends on the frequencies to be passed on. A very low value ...

This paper proposes a capacitance measurement method that can accurately measure the capacitance under a DC bias of 3 kV. This method decouples the high DC bias voltage and high frequency alternating small signals and realizes low voltage calibration and high voltage isolation.

By combining theoretical derivation with numerical simulation, an electromechanical coupling model of pulse power-MLCC under high voltage and high-impact composite environments was proposed, and the reliability of the model was verified by comparing it with experimental results.

As high voltage pulse power capacitors, ceramic capacitors are widely used in high voltage pulse generators, trigger circuits, laser generators, and other field Skip to Main Content Close

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This paper proposes a novel L-C band pass impedance matching circuit for PLC applications coupled to a Single Wire Earth Return (SWER) network via a 1.1 nF High Voltage (HV) Coupling Capacitor (CC). The work begins with characteristic impedance prediction of various SWER conductors followed by an analysis of the theoretical LC ...

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