

What is the measurement error of capacitor voltage Transformers (CVTs)?

The measurement error of capacitor voltage transformers (CVTs) has poor stability under the complex environment of substations. Conventionally, error detection is performed by regularly comparing the output of standard transformers, which lacks real-time performance. Moreover, CVTs are prone to operating in an out-of-tolerance state.

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 offers standard coupling capacitors from 12 kV up to 100 kV.

What is a coupling capacitor (C C)?

A coupling capacitor (C C) is a very common coupling method when performing a PD measurement as 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).

How accurate are capacitive voltage transformer metering errors?

The metering accuracy of capacitive voltage transformers (CVTs) affects the fairness of electricity settlement, and the online measurement of their metering errors has become a research hotspot. This error consists of amplitude and phase errors of three-phase voltages.

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

discharge (PRPD) measurement. OMICRON offers 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 a coupling capacitor voltage transformer (CCVT)?

There are several types of instrument transformers, but one of the most common on higher voltage transmission systems is the coupling capacitor voltage transformer (CCVT). CCVTs are devices capable of dual function.

An increase of equivalent capacitance and dielectric loss factor in the low-voltage capacitor will cause a negative real power measurement error. Measurement errors of a capacitive voltage transformer (CVT) are relevant to its equivalent ...

974 IEEE JOURNAL OF SOLID-STATE CIRCUITS, VOL. 23, NO. 4, AUGUST 1988 are set to ground. S3 is opened and the SAR/DAC is comparator resolution. A smaller CP increases 8 ...

Capacitive coupling, also known as electrostatic coupling, can also occur between the signal wires in a measurement circuit and a nearby mains-carrying conductor. The magnitude of the ...

Abstract When the manufacturers produce capacitor voltage transformers (CVT), the function of harmonic measurement is not considered. Therefore, this paper explores methods to solve the problems of... Skip to ...

Coupling capacitor voltage transformers (CCVT) are the predominant devices used in high voltage systems to provide scaled down voltage signals for metering, protection and control devices. ...

To achieve CVT On-line Error Measurement, a hybrid-driven method by domain knowledge and Stacking model is proposed in this paper. In response to the difficulty of ...

The current into a capacitor is proportional to the rate of change of the voltage and so leads the voltage in phase when you apply AC. Capacitive coupling occurs because ...

This paper addresses the use of a Coupling Capacitor Voltage Transformer with built-in harmonic monitoring device (CCVTHM) to provide frequency response and accurate measurement of ...

In some circumstances, the CVD capacitive reactance can resonate with the magnetizing reactance of the inductive voltage transformer and the compensating reactor cores. This unwanted effect is called ferro ...

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A circuit technique for accurately measuring coupling capacitance - ASIC /SOC Conference, 2002. 15th Annual IEEE International Created Date 7/31/2001 1:13:59 PM

In this brief, two figures of merit and a switched-capacitor filter are used to estimate and measure, respectively, the mismatch between fully integrated capacitors. The ...

The electronic design of SCD is inherited from the Silicon Tungsten Tracker of the Dark Matter Explorer (DAMPE), whose linear dynamic range can only directly measure the ...

The non-intrusive voltage measurement technique does not require a direct electrical connection to the line or equipment, and it can accurately measure voltage and avoid ...

In order to improve the measurement accuracy, we propose a new measurement method using a parasitic-insensitive switched capacitor amplifier and the ...

In this paper, the characteristics of CVT error data and the coupling between error prediction tasks are fully analyzed. A novel CVT error prediction model is constructed based ...

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