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**Verification Regulation of High Voltage Capacitance Bridges
(English Translation)**

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High voltage capacitor bridge verification procedure

1 Scope

This procedure applies to Xilin type and current comparison for measuring capacitance and dielectric loss factor under 50 Hz power supply conditions.

First-time verification, follow-up verification and inspection in use of instrument type and electronic and digital high-voltage capacitor bridges. Based on high the bridge part of the high-voltage dielectric loss meter of the principle of pressure-capacitor bridge is verified according to this regulation. After the bridge part is combined with the high-voltage capacitor Calibrate according to the procedure Appendix F.

This procedure does not apply to the verification of bridge sections used by high voltage capacitor bridges for AC bridges.

2 Overview

2.1 Working principle of high voltage capacitor bridge the high-voltage capacitor bridge can be considered as a device for measuring the ratio of the power frequency current from the working principle. When power frequency is high when applied to high voltage standard capacitors and devices under test, they are proportional to their capacitance and dielectric loss factor.

The in-phase and quadrature power-frequency current components, the two power-frequency current components are measured by the bridge, and then the measured the difference between the capacitance ratio of the device and the high voltage standard capacitor and the dielectric loss factor.

2.2 Classification of high voltage capacitor bridges

2.2.1 Xilin type high voltage capacitor bridge the current proportional arm of the bridge consists of a resistor. A phase shifting capacitor is connected in parallel to the proportional arm flowing through the reference current. Pick Use the potential balance indicator.

2.2.2 Current Comparator High Voltage Capacitor Bridge the current proportional arm of the bridge consists of a proportional winding of the current comparator. The proportional arm that flows through the reference current is attached with a shift the phase circuit uses a magnetic potential balance indication. According to the phase shifting method, such bridges can be divided into active and passive. Belong to none One of the sources is directly phase-shifted with a RC circuit; an active one is used with an electronic amplifying element and the RC element is orthogonally shifted phase. The magnetic potential synthesis method is used to achieve the desired phase shift.

2.2.3 Electronic high voltage capacitor bridge High-voltage capacitor bridges that measure amplitude ratio and phase difference using electronic circuits, including analog and digital circuits.

2.2.4 Digital high voltage capacitor bridge A high-voltage capacitor bridge that measures amplitude ratio and phase difference using a digital signal processing method.

2.3 high pressure dielectric loss meter the high voltage dielectric loss meter involved in this regulation is a high voltage capacitor bridge, high voltage test power supply and high voltage standard capacitor.

A measuring device consisting of. The high voltage test power supply is usually not higher than 10kV and the frequency is 40Hz~70Hz.

3 Metrological performance requirements

3.1 Accuracy rating of high voltage capacitor bridge

3.1.1 The accuracy of the high-voltage capacitor bridge is rated as follows according to the capacitance ratio and the dielectric loss factor.

Capacitance ratio measurement accuracy levels are 0.001, 0.002, 0.005, 0.01, 0.02, 0.05, 0.1, 0.2,