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CORRECTION OF ERRORS IN THE REMOTE MEASUREMENT OF THE PHASE DIFFERENCE BETWEEN THE ELECTRIC SIGNALS

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Abstract

The errors of the measurement of the phase difference between the alternating currents flowing through the remote objects of control are analyzed. A substantial impact on the result of the measurement values of the clock frequency of remote measurement modules is noted. It is shown that the additive component of error is unacceptably high, which doesn't satisfy the requirements of the problem diagnostic of the condition of high-voltage capacitor isolation under operating voltage. A method of reducing the error based on the multiplicative correction of measurements of time intervals from the start of sampling until the transition the input signals through zero is proposed. Usage of this method can reduce the error to a level that ensures the necessary metrological characteristics of the measuring system. References 8, figure 1.

Key words: phase difference, remote measurement, high voltage insulation, loss tangent, measurement under operating voltage, multiplicative correction of errors.

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