

The present invention relates to methods designed for measuring electric and magnetic parameters, specifically to methods for measuring alternating electric current values by metering iron-core transformers. The proposed method consists in measuring the current values by an iron-core metering current transformer, accomplishing the analog-to-digital conversion of the current transformer output signal, determining time intervals in the time measurement system that is synchronized with the mains clock, calculating the magnetizing current of the current transformer from the data characterizing the transient process in the current transformer and section-linear approximation of the nonlinear characteristic of the current transformer, and then determining the metering transformer primary current with consideration for the magnetizing current of the transformer. After corresponding processing, the measurement data can be used in a mains relay protection system.

The device for realization of the method contains a measuring iron-core current transformer, an analog-to-digital converter, a processor for processing measurement data, and additionally, a unit for determining time intervals in the time measurement system that is synchronized with the mains clock, and a processor for calculating the metering transformer primary current. The input of the analog-to-digital converter is connected to the output of the current transformer. The input of the unit for determining time intervals is connected to the output of a voltage transformer connected to the mains. The output of the analog-to-digital converter and the output of the unit for determining time intervals are connected to the corresponding inputs of the processor for calculating the metering transformer primary current. The output of this processor is connected to the input of the processor for processing measurement data.

The present invention provides for increasing the measurement accuracy and operational reliability of mains relay protection systems when using simple and reliable metering iron-core transformers.