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INPE 50 Nowe rozwiązania pomiaru impedancji pętli zwarciowej przy odkształceniu krzywej napięcia w miejscu badania

Cena brutto **12,96 zł**

Cena netto **12,00 zł**

Opis produktu

Zeszyt 50

Ryszard Roskosz

Nowe rozwiązania pomiaru impedancji pętli zwarciowej przy odkształceniu krzywej napięcia w miejscu badania
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ABSTRACT

This study is devoted to the problems of power system loop impedance measurement in low voltage systems with special reference to cases where the voltage waveform at the testing point is distorted. An analysis of the effect of waveform distortion on measurement errors allows for the assessment of known loop impedance measuring methods and instruments in networks with distinct voltage waveform distortion. New patented solutions for loop impedance measurement, which eliminate the effect of higher harmonics on the measurement result are proposed.

The significance of loop impedance measurements is presented in the introduction, followed by an outline of the aim and scope of the dissertation. Problems of loop impedance measurement in networks with sinusoidal voltage waveforms are discussed in the leading chapters. The effect on measurement errors of factors like: difference in phase angle between loop impedance and measurement load impedance, network voltage fluctuations, presence of working loads, and the existence of transients in the tested circuit due to operation of the measuring instrument, are discussed with reference to the author's previous works and other literature. An analysis of the effect of tested voltage harmonics on measurement errors is conducted in Chapter 4, with special emphasis on present-day loop impedance measurement methods and instruments. Test and calculations of measurement errors were done for given types of distorted waveforms and for different parameters of the tested circuit.

The theoretical principles governing the new loop impedance measurement method, based on particular sampling, are presented in Chapter 5. Relations are derived for determining the values of loop impedance, resistance and reactance in which the influence of higher harmonics are eliminated. Chapter 6 deals with the practical realization of the new method. A system loop impedance measuring instrument with built-in microprocessor is presented. Examples of test measurement error results obtained using the new instrument are also presented.

The present study contains extensive fragments of author Doctor of Science dissertation published in the „Zeszyty Naukowe Politechniki Gdańskiej” No. 527 in 1995. Assemble the research work since 1995 of the author and his co-workers on the measurement of loop impedance is posted on the end of references list of this elaboration..

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