

Invention relates to the measurement of total harmonic distortion of the power supply voltage in an electrical power distribution system and is intended for measuring the total harmonic distortion coefficient. Method for measuring total harmonic distortion consists of measuring the current or voltage obtained by an AC electrical circuit to generate a set of measurement results, filtering the set of measurements using a discrete Fourier transform, and determining the values of the measured current or voltage at harmonic frequencies of the measured current or voltage, where the harmonic frequency is an integer multiple of the fundamental frequency. Thereafter, the total harmonic distortion coefficient is calculated according to a function that includes the determined harmonic amplitudes, and the total harmonic distortion coefficient is stored in memory. The fundamental frequency is determined through a series of cyclically repeated steps: obtaining an analytical signal by applying the discrete Hilbert transform to a set of measurements, evaluating its phase response, calculating an intermediate estimate of the fundamental frequency based on the phase response, and storing this estimate. Additionally, the parameters for resampling the set of measurement results are determined, a set of resampled data consistent with the fundamental frequency estimate is generated, and the moving average of the fundamental frequency is calculated based on the obtained intermediate values; subsequently, the moving average obtained when its values remain unchanged is selected as the fundamental frequency. Furthermore, the data set size and sampling frequency, which are consistent with the fundamental frequency, are determined; based on these, the final resampling of the current or voltage measurement results is performed. The discrete Fourier transform is then applied to the resulting data set, and on this basis, the amplitudes of the harmonics are determined, which are used to calculate the refined total harmonic distortion coefficient. The technical result of the invention is an increase in the accuracy of determining the total harmonic distortion coefficient.