



Evaluation of Different Methods for Voltage Sag Source Detection Based on Positive-Sequence Components

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Abstract. This paper evaluates methods for voltage sag source detection, which are based either on energy, current or impedance criteria. It is shown that some methods known from the literature do not work well, particularly in cases of asymmetrical voltage sags. Furthermore, some methods require measurements of instantaneous values, which is not always feasible. Therefore, symmetrical component transformation is applied, whereas only positive-sequence components are used. All the discussed methods were tested by applying extensive simulations and field tests. The obtained results show that all methods which are based on positive-sequence components are highly effective also in cases of asymmetrical voltage sags.

Key words power systems, power quality, voltage sag, source detection.

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