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Symmetrical components of unbalanced voltage or current phasors; 2.2.3 Apparent power in symmetrical component terms; 2.2.4 Definition of phase sequence component networks; 2.2.5 Sequence components of unbalanced three-phase impedances; 2.2.6 Sequence components of balanced three-phase impedances; 2.2.7 Advantages of symmetrical components frame of reference; 2.2.8 Examples; 2.3 Analysis of balanced and unbalanced faults in the sequence reference frame; 2.3.1 General; 2.3.2 Balanced three-phase to earth short-circuit faults
2.3.3 Balanced three-phase clear of earth short-circuit faults 2.3.4 Unbalanced one-phase to earth short-circuit faults; 2.3.5 Unbalanced phase-to-phase or two-phase short-circuit faults; 2.3.6 Unbalanced two-phase to earth short-circuit faults; 2.3.7 Unbalanced one-phase open-circuit faults; 2.3.8 Unbalanced two-phase open-circuit faults; 2.3.9 Example; 2.4 Fault analysis and choice of reference frame; 2.4.1 General; 2.4.2 One-phase to earth short-circuit faults; 2.4.3 Two-phase to earth short-circuit faults; 2.5 Analysis of simultaneous faults; 2.5.1 General
2.5.2 Simultaneous short-circuit faults at the same location 2.5.3 Cross-country faults or simultaneous faults at different locations; 2.5.4 Simultaneous open-circuit and short-circuit faults at the same location; 2.5.5 Simultaneous faults caused by broken and fallen to earth conductors; 2.5.6 Simultaneous short-circuit and open-circuit faults on distribution transformers; Further reading; Chapter 3 Modelling of multi-conductor overhead lines and cables; 3.1 General; 3.2 Phase and sequence modelling of three-phase overhead lines; 3.2.1 Background 3.2.2 Overview of the calculation of overhead line parameters

Sommario/riassunto

This book provides a comprehensive practical treatment of the modelling of electrical power systems, and the theory and practice of fault analysis of power systems covering detailed and advanced theories as well as modern industry practices.The continuity and quality of electricity delivered safely and economically by today's and future's electrical power networks are important for both developed and developing economies. The correct modelling of power system equipment and correct fault analysis of electrical networks are pre-requisite to ensuring safety and they play a critical role