

1. Record Nr.	UNINA9910457670503321
Autore	Hewitson Les
Titolo	Practical power system protection [[electronic resource] /] / Les Hewitson, Mark Brown, Ben Ramesh
Pubbl/distr/stampa	Oxford ; ; Burlington, MA, : Elsevier/Newnes, 2004
ISBN	1-280-62919-3 9786610629190 0-08-045598-0
Edizione	[4th ed.]
Descrizione fisica	1 online resource (289 p.)
Altri autori (Persone)	BrownMark RameshBen
Disciplina	621.3121 621.317
Soggetti	Electric power systems Electrical engineering Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Cover; Front matter; Half Title Page; Other titles in the series; Title Page; Copyright; Contents; Preface; 1. Need for protection; 1.1 Need for protective apparatus; 1.2 Basic requirements of protection; 1.3 Basic components of protection; 1.4 Summary; 2. Faults, types and effects; 2.1 The development of simple distribution systems; 2.2 Fault types and their effects; 3. Simple calculation of short-circuit currents; 3.1 Introduction; 3.2 Revision of basic formulae; 3.3 Calculation of short-circuit MVA; 3.4 Useful formulae; 3.5 Cable information; 3.6 Copper conductors; 4. System earthing 4.1 Introduction 4.2 Earthing devices; 4.3 Evaluation of earthing methods; 4.4 Effect of electric shock on human beings; 5. Fuses; 5.1 Historical; 5.2 Rewireable type; 5.3 Cartridge type; 5.4 Operating characteristics; 5.5 British standard 88:1952; 5.7 Application of selection of fuses; 5.9 Special types; 5.10 General; 5.11 Is-limiter; 6. Instrument transformers; 6.1 Purpose; 6.2 Basic theory of operation; 6.3 Voltage transformers; 6.4 Current transformers; 6.5 Application of current transformers; 6.6 Introducing relays; 6.7 Inverse definite

minimum time lag (IDMTL) relay; 7. Circuit breakers
7.1 Introduction 7.3 Purpose of circuit breakers (switchgear); 7.4 Behavior under fault conditions; 7.5 Arc; 7.6 Types of circuit breakers; 7.7 Comparison of breaker types; 8. Tripping batteries; 8.1 Tripping batteries; 8.2 Construction of battery chargers; 8.3 Maintenance guide; 8.4 Trip circuit supervision; 8.5 Reasons why breakers and contactors fail to trip; 8.6 Capacitor storage trip units; 9. Relays; 9.1 Introduction; 9.2 Principle of the construction and operation of the electromechanical IDMTL relay; 9.3 Factors influencing choice of plug setting 9.5 Universal microprocessor overcurrent relay 9.6 Technical features of a modern microprocessor relay; 9.7 Type testing of static relays; 9.8 The future of protection for distribution systems; 9.9 The era of the IED; 9.10 Substation automation; 9.11 Communication capability; 10. Coordination by time grading; 10.1 Protection design parameters on medium- and low-voltage networks; 10.2 Sensitive earth fault protection; 11. Low-voltage networks; 11.1 Introduction; 11.2 Air circuit breakers; 11.3 Moulded case circuit breakers; 11.4 Application and selective coordination 11.5 Earth leakage protection 12. Mine underground distribution protection; 12.1 General; 12.2 Earth-leakage protection; 12.3 Pilot wire monitor; 12.4 Earth fault lockout; 12.5 Neutral earthing resistor monitor (NERM); 13. Principles of unit protection; 13.1 Protective relay systems; 13.2 Main or unit protection; 13.3 Back-up protection; 13.4 Methods of obtaining selectivity; 13.5 Differential protection; 13.6 Transformer differential protection; 13.7 Switchgear differential protection; 13.8 Feeder pilot-wire protection; 13.9 Time taken to clear faults 13.10 Recommended unit protection systems

Sommario/riassunto

Plant operators, electricians, field technicians and engineers will gain a practical understanding of the role and workings of power system protection systems from this work. An understanding of power systems and their optimized management will increase plant efficiency and performance as well as increasing safety levels. This book provides both the underpinning knowledge and basic calculations needed to understand, specify, use and maintain power protection systems, and the practical techniques required on a daily basis. After studying this book you will have an excellent knowledge of
