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Nota di contenuto	Introduction -- Overview of DC Fault Protection Technologies -- ABB's Recent Advances in Solid-state Circuit Breakers -- Eaton's Recent Advances in Solid-state Circuit Breakers -- iBreaker: Intelligent Multi-mode Solid-state Circuit Breaker Technology Using Wide Bandgap Semiconductor Switches -- T-type Modular DC Circuit Breaker (T-breaker) for Future DC Networks -- Resonant Solid-state Breakers Based on Wireless Coupling in MVDC Systems -- ABB's Recent Advances in Hybrid Circuit Breakers -- Hybrid Circuit Breaker With Transient Commutation Current Injection -- Efficient DC Interrupter With Surge Protection -- 500kv/25ka Hybrid Circuit Breaker Development -- Hybrid Circuit Breaker Based on MMC Topology -- Ultra Fast Resonant DC Breaker -- Inline Gas Discharge Tube Breaker for Meshed MVDC Grids -- Converter-based Breakerless Protection --

Fault Current Limiters and Their Applications -- Fundamental Challenges and Future Outlook.

Sommario/riassunto

The lack of effective DC fault protection technology remains a major barrier for the DC paradigm shift. In addressing the key challenges, *Direct Current Fault Protection: Basic Concepts and Technology Advances* starts with an introduction to the advantages of DC power systems before moving on to an in-depth review of DC fault protection technologies, including mechanical circuit breaker (MCB), solid-state circuit breaker (SSCB), hybrid circuit breaker (HCB), converter based (breakerless) protection, and fault current limiter (FCL). Coverage includes a comprehensive comparison of various DC fault interruption technologies and their suitable applications, state-of-the-art DC fault protection concepts and advances in research, identification of fundamental challenges and future directions in the field, and commercialization aspects. This book will be a valuable reference for practicing engineers, researchers, and graduate students in the field of power electronics and DC power systems. Covers basic concepts and recent advances Offers insights on challenges and potential solutions Discusses relevance to adoption, operation, and efficiency of distributed renewable energy systems .
