ABB Microprocessor-based Relay Protection



Overview

Protection relays Numerical relays are based on the use of microprocessors. The first numerical relays were released in 1985. A big difference between conv.

Key Takeaways

ABB microprocessor-based relays are programmable, multifunctional devices that provide advanced protection and control for electrical power systems. OverviewABB's microprocessor-based relays, first introduced in 1985, are designed to monitor, protect, and control electrical networks autonomously, ensuring safe and reliable power distribution. Unlike conventional electromechanical or static relays, which have fixed wiring and manual settings, microprocessor-based relays are programmable, allowing users to configure protection characteristics, operating curves, and multifunctional features according to system requirements.

Key Features

Programmable and Multifunctional: Users can set protection parameters, time-current characteristics, and logic functions digitally.

Self-

Powered Options: Certain models, like the MICRO-51, operate directly from current transformers without continuous control voltage, reducing energy consumption. Phase and Ground Protection: MICRO-51 relays provide both phase and ground overcurrent protection for utility, industrial, and commercial systems.

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Self-

Checking and Reliability: These relays perform internal diagnostics to ensure proper operation and reduce maintenance needs. Flexible Settings: They offer multiple selectable curves and adjustable settings to match system protection requirements. ApplicationsABB microprocessor-based relays are widely used in: Utility Networks: Supervising electricity distribution and preventing faults from propagating.

Industrial and Commercial Systems: Protecting motors, transformers, and feeders from overcurrent and short circuits. Integration with Smart Grids: Supporting renewable energy sources and distributed generation while maintaining network stability. Example: MICRO-51 RelayThe MICRO-51 is a microprocessor-based time-overcurrent relay that: Operates from conventional 5A or 1A secondary current transformers.

Is self-powered and self-checking, with front-panel switch settings for easy configuration. Provides multiple selectable curves for overcurrent protection, making it suitable for diverse network conditions.

Advantages Over Conventional Relays

Programmability allows for precise and adaptable protection schemes. Multifunctionality reduces the need for multiple separate relays. Enhanced reliability through self-diagnostics and digital processing.

Energy efficiency in self-powered models. ABB's microprocessor-based relays, including the Relion® family and legacy models like MICRO-51, play a critical role in modern power systems by ensuring safety, stability, and efficient operation across utility and industrial networks.

Article Content

Protection relays

Numerical relays are based on the use of microprocessors. The first numerical relays were released in 1985. A big difference between conventional

Microprocessor-based time-overcurrent relay

MICRO-51 microprocessor-based overcurrent relays are used for phase and ground overcurrent protection in utility, industrial and commercial electrical power

Protection relays — ABB Group

ABB''s smart protection technology ensures smooth and safe everyday life without blackouts. ABB released its first programmable relays based on the use of microprocessors in 1985. ABB''s Relion®

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Littelfuse Protection Relays T

Solid-State Overcurrent Relays ABB Circuit-Shield Type 51 Solid-State relays provide overcurrent protection phas. -to-phase and phase-to-ground. They are designed to be operated by standard five

Numerical relay

Such relays are also termed as microprocessor type protective relays. They are functional replacements for electro-mechanical protective relays and may include many protection functions in one unit, as

446S1201 ABB MICRO-51 RELAY

Solid State or Microprocessor based relays are generally equipped with a large variable of settings and curve options and some Electromechanical relays provide for adjustable calibrated settings.

Microprocessor-Based Protective Relay Configurations: Effective ...

Protection philosophies and narratives, communications scheme documentation, and programmable logic documentation are discussed in an effort to illustrate a complete approach that

Motor Protection Relays

Business listings of Motor Protection Relays, Induction Motor Protection manufacturers, suppliers and exporters in New Delhi, Delhi along with their contact details & address. Find here Motor Protection

Protective Relay Market Report, Industry and Market Size & Revenue ...

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This remains one of the most mature markets for protective relays, with utilities across the U.S. and Canada already deep into digital relay retrofits. Most large grid operators are replacing aging

Protection Relay Manufacturers 2026: MV Selection Guide

Modern numerical relays have displaced electromechanical predecessors across 90% of new installations. These microprocessor-based devices integrate multiple protection functions,

Feeder Protection Solution with Microprocessor-Based Relays for

This solution, based on advanced microprocessor-based protective relays and integrating multiple innovative algorithms, provides comprehensive, rapid, and reliable feeder protection for modern

Basler Electric Basler Electric ES-49. Temperature Relay

Three models are available: the ES-37 provides undercurrent protection, the ES-51 provides overcurrent protection, and the ES-37/51 provides undercurrent and overcurrent protection. Microprocessor

Overcurrent Relay at ₹ 25000/piece | Instantaneous Overcurrent Relay

The ABB REJ601 Feeder Protection Relay is a compact, microprocessor-based numerical protection relay designed to provide reliable protection for medium-voltage (MV) distribution feeders, overhead

Microshield O/C Multiphase Time-Overcurrent Relay

Microshield O/C Multiphase Time-Overcurrent Relay The Microshield O/C relay is an advanced microprocessor based unit that was designed to provide high value three phase and ground

ABB 1SDA053148R1 Molded Case Circuit Breaker, Thermal

ABB Tax T2 Series — 100A, 480V Molded Case Circuit Breakers:The T2 breaker family ranges from 15 through 100 amperes. The T2 trip units are non-interchangeable and use the very latest technology

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