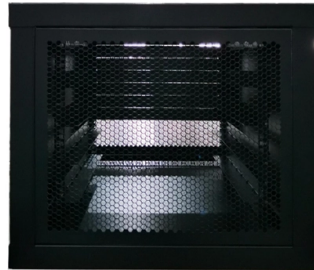


Four circuits of relay protection



Summary of Content

The four primary circuits in relay protection are the current circuit, voltage circuit, tripping circuit, and auxiliary/control circuit.

1. Current Circuit

The current circuit is connected to the power system through current transformers (CTs) and carries a scaled-down version of the line current to the relay. It allows the relay to continuously monitor the current and detect abnormal conditions such as overcurrent or short circuits. The relay measures the magnitude and phase of the current to determine if a fault has occurred and whether tripping is necessary .

2. Voltage Circuit

The voltage circuit is connected via potential transformers (PTs) or voltage transformers (VTs) to the system. It provides the relay with a scaled-down voltage signal, enabling it to detect abnormal voltage conditions such as overvoltage, undervoltage, or phase imbalance. Voltage circuits are essential for relays that operate based on voltage thresholds or directional protection schemes .

3. Tripping Circuit

The tripping circuit is the output path from the relay to the circuit breaker (CB). When the relay detects a fault, it sends a trip signal through this circuit to open the breaker and isolate the faulty section. This circuit ensures the protection system acts quickly to prevent damage to equipment and maintain system stability .

4. Auxiliary/Control Circuit

Article Content

Protective relay

Electromechanical protective relays at a hydroelectric generating plant. The relays are in round glass cases. The rectangular devices

SCHEMATIC REPRESENTATION OF POWER SYSTEM RELAYING

Prepared by Working Group I5 Working Group Assignment presentation of protection and control relaying. The report

Types of Electrical Protection Relays or Protective Relays

Protective relays can be categorized based on their operating mechanisms into electromagnetic relay, static, and

Practical handbook for relay protection engineers | EEP

This handbook covers the code of practice in protection circuitry including standard lead and device numbers, mode of

Relays Part 4: The Protective Relay Basic Theory

Summary□ Several types of relays for different purposes exist in the area of power electronics and in this article, we

Relays: How They Work, Types, Contacts & Power System Uses

A simple relay may use a coil and contacts to control a load, while a protective relay may process CT and PT inputs

Power System Protective Relays: Principles & Practices

Abstract: Protective relays and devices have been developed over 100 years ago to provide “last line” of defense for the electrical

Protective Relay : Working, Types, Circuit & Its Applications

There are different types of relays available and each type is used based on the requirement. So this article discusses an overview of

Protective Relay: Working, Types, and Applications

Learn about protective relays, their working principle, types, and applications in power systems. Discover how relays

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Electromechanical protective relays at a hydroelectric generating plant. The relays are in round glass cases. The rectangular devices

Protective Relays: Types, Working Principle & Uses

Learn how protective relays detect faults, trip breakers, coordinate protection zones, and protect feeders,

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: <https://benniedesignstudio.co.za>

Email: sales@benniedesignstudio.co.za

Phone: +27 82 391 4765

Address: The Towers, 1 St Georges Mall, Cape Town, 8001, South Africa

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