

Types of Relay Protection for 35kV Transformers



Article Overview

A 35kV transformer should be protected using a combination of differential, overcurrent, temperature, and grounding protection, with carefully coordinated relay settings and CT/VT configurations.

Primary Protection

Differential Protection (87T) Differential protection is the most sensitive and essential protection for internal transformer faults, such as inter-turn short circuits or winding-to-ground faults. It requires matched current transformers (CTs) on all windings, with correct ratios and polarity to avoid maloperation. The relay should be set to detect differential currents above the threshold while remaining stable during inrush conditions or external faults ().

Backup Protection

Overcurrent Protection (50/51) Overcurrent relays act as secondary protection if differential protection fails or for external short circuits. Multi-stage settings ($I>$, $II>$, $III>$) are recommended, coordinated with upstream line protection to prevent unnecessary tripping. Time-current curves should be adjusted to ensure proper grading margins, typically 0.2-0.5 seconds between relays ().

Temperature Protection

Article Content

Introduction to Protective Relaying | Electric Power Measurement and ...

Introduction to Protective Relaying What are Protective Relays, or Protection Relays? Protective relays are used in industrial power

Transformer Protection Application Guide

This guide focuses primarily on application of protective relays for the protection of power transformers, with an emphasis on the

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 Relaying Principles and Applications

Protective Relaying Principles and Applications The article provides an overview of protective relaying principles and their

Types of Protective Relays

This article covers various types of protective relays, such as overcurrent, directional, and differential relays, highlighting their

IEEE Guide for Protective Relay Applications to Power Transformers

Types of transformer failures This guide deals primarily with the application of electrical relays and over-current protective devices to

Understanding Transformer Protection: From Buchholz Relay to ...

This article explains the most commonly used transformer protection methods-what they do, when to use them, and how to choose

Protective Relay Basics

Traditionally, protective relays were electromechanical devices utilizing induction disk, coils, contacts, and solenoid elements to

Types of Protective Relays

Types of Protective Relays In a power system consisting of generators, transformers, transmission and distribution circuits, it is

Types of Transformer Protection Relays and its Uses

Protection relays are protective devices used to sense various faults and give signals to circuits (master trip circuit)

Fundamentals of Distance Protection

Introduction Impedance relays and automatics are devices whose function is based on the magnitude and angle of impedance. The

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