

Primary and secondary values of relay protection



Overview

Primary side is the line current and secondary side is connected to the relay. Multiple relays can use the same CT. Combines protection, sensors, control power, and circuit breaker in a single package Typically added to a breaker close circuit to prevent accidental reclosure after a trip. Three fundamental components required for each circuit breaker. CT's transform line current down to a signal level that is. These parameters define exactly when a relay starts operating and when it resets, ensuring reliable protection system performance. These tests are performed using relay test equipment, either through secondary injection or through primary injection using high-current injection equipment. The selection and applications of. Relay protection is essential to ensure the stability, reliability, and safety of electrical power systems. The protective relaying is used to give an alarm or to cause prompt removal of any element of power system from service. Plug Setting Multiplier (PSM): The ratio of the fault current to the relay's pickup current, critical for relay operation.



Article Content

Jan 25, 2026

Types of Electrical Protection Relays or Protective Relays

Operating Principles: Protective relays operate by detecting abnormal signals, with specific pickup and reset levels to start or stop their

Sep 14, 2025

Primary and Secondary Protection Schemes

The Secondary relay Protection scheme is intended to operate in the event of a failure of the primary supply. Hence, the secondary relay protection scheme

Mar 31, 2026

Protective Relay Basics Part 2

Part 1: Protective relay compared to low voltage circuit breaker. Review fundamental concepts, components, and terminology using the electromechanical overcurrent relay as a foundation.

Jun 07, 2026

Distribution Automation Handbook

On faults inside the area of protection, the current transformers attempt to feed a secondary current proportional to the short-circuit current through the relay.

Aug 11, 2025

Pick Up Current | Current Setting | Plug Setting Multiplier and Time ...

Learn how to perform relay testing using primary and secondary injection methods. Understand pick-up and drop-out tests with modern relay test

Jun 10, 2026

The fundamentals of protection relay co-ordination and

Among the various possible methods used to achieve correct relay co-ordination are those using either time or overcurrent, or a combination of both.

Jan 04, 2026

Protective Relay Basics

Primary side is the line current and secondary side is connected to the relay. Multiple relays can use the same CT. The limit is defined by the electrical load (burden) of the relays in relation to the maximum

Feb 19, 2026

Primary and Secondary Protection Schemes

The current and voltage signals, the power supply of the relay, the output to the breaker should all be independent of the primary protection scheme. The

Feb 10, 2026

UNIT 1 PROTECTIVE RELAYS

wer system is protected. The factors affecting the choice of protection are type and rating of equipment, location of the equipment, types of faults, abnormal conditions and cost. The protective relaying is

Jul 31, 2025

Zones of Protection in Power Systems

Primary protection is designed to provide fast and selective protection within a specific zone, while backup protection is designed to provide

Apr 24, 2026

Primary and Backup Protection in Power System:

Understanding how Primary and Backup Protection systems function is key for ensuring the stability and reliability of power systems. These protective relays

Mar 16, 2026

Relay Protection in HV/MV Substations: Calculations,

Relay protection calculations determine the threshold values and parameters for the protective relays based on the substation's operational and

Nov 01, 2025

Philosophy of Primary and Back-up Protection

This is Time Grading where a time is provided for main Relay to operate. Remote back-up protection is provided by protection that detects an un-cleared primary system fault at a remote

Oct 19, 2025

Pick Up Current | Current Setting | Plug Setting

When studying electrical protective relays, we often use specific terms. To understand how different protective relays work, it's essential to know

Jul 18, 2026

Relay Protection in HV/MV Substations: Calculations,

Primary and Secondary Ratios: Accurate relay settings start with selecting the proper current and voltage transformer ratios to match the

Jul 05, 2026

Relay Settings Calculations

The value for forward load impedance is calculated in view of the full load of the transmission line with an additional margin of over loading. The second consideration is the tripping of one circuit and the

Apr 01, 2026

Primary and Secondary Injection Relay Testing: Pick

Learn how to perform relay testing using primary and secondary injection methods. Understand pick-up and drop-out tests with modern relay test

Jun 15, 2026

Relay Protection Settings (PSM, TSM, EL, OL, MF)

Protection relays employ a wide range of configurable parameters to identify defects & trip the breaker in a controlled & selected manner.

Jul 22, 2026

doi: 10.1007/978-3-319-20919-7_3

After setting the relays, one should consider faults at the end of each line (feeder segment) and check if the relay protecting the line (primary protection) and at least one relay upstream (back-up protection)

May 16, 2026

Basics of Protective Relaying and Design Principles

This chapter focuses on the basics of power system relaying with special attention paid to the overcurrent, impedance, and differential protection.

Dec 17, 2025

Protective Relays: Types, Working Principle & Uses

Backup protection provides a second layer if the primary relay, breaker, trip circuit, or communication channel fails. In many systems, backup protection is slower because it must

Feb 09, 2026

Relays Part 4: The Protective Relay Basic Theory

The types of protective relays that exist are overcurrent, electromechanical, directional, distance, pilot, and differential relays. The circuit diagram of the protective relay is made up of current

Nov 09, 2025

Setting the generator protective relay functions

Protective relay functions and data This technical article will cover the gathering of information needed to calculate protective relay settings, the

May 16, 2026

Power System Protective Relays: Principles & Practices

As the protected components of the electrical systems have changed in size, configuration and their critical roles in the power system supply, some protection aspects need to be revisited (i.e. the use of

Dec 13, 2025

Types of Protective Relays

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

Nov 13, 2025

Fundamentals of Modern Protective Relaying

A primary motor protective element of the motor protection relay is the thermal overload element and this is accomplished through motor thermal image modeling. This model must account for thermal

Contact Us

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

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

Email: sales@khanimamboguesthouse.co.za

Phone: +27 64 852 1973

Address: Unit 7, Greenway Business Park, 8 Innovation Drive, Centurion, 0157, South Africa

This document is for informational purposes only. Specifications subject to change without notice.

