

Sensitivity refers to the sensitivity of a relay protection device



Overview

Sensitivity in protective relays refers to: The minimum fault current (or power, voltage, etc.) that the relay can reliably detect and respond to. Based on simple examples of the generator-transformer unit protection from symmetrical short circuits, it was shown that the sensitivity factor is not a sufficiently objective measure of sensitivity of the. Selectivity is a mandatory requirement for all protection, but the importance of it depends on the application. For example, unselective protection operation during a medium voltage network fault will cause an outage for an unnecessarily large number of consumers. Only the effected parts of the power system shall be disconnected. Necessity of speed in relaying. A relay is said to be dependable if it trips only when it is expected to trip.



Article Content

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General Requirements of Protection Relay in Power

3.2, the sensitivity coefficient: refers to the power system in the minimum mode of operation, in the entire protection of any point within the scope

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Fundamentals of Protective Relaying

The definitions that follow are generally used in relation to power system protection:

Protection System: a complete arrangement of protection

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Essential Qualities of Protection in Power System

Selectivity or Discrimination Sensitivity Reliability Stability Fast operation Essential Qualities of Protection Let us understand each quality in detail. 1. Selectivity or Discrimination The

Apr 25, 2026

Protective Relay Basics

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

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Protective Relay | Fundamental Requirements of

A Protective Relay is a device that detects the fault and initiates the operation of the circuit breaker to isolate the defective element from the rest of the system.

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Relay protection sensitivity integrated optimal placement and capacity ...

Relay protection sensitivity refers to the capability of a protection system to detect and respond to even the smallest faults within its designated protected zone .

Sep 27, 2025

Assessing the Sensitivity of Relay Protection

This article explores the issues of enhanced sensitivity of multi-parameter relay protection using long-range redundancy protection as an example.

Oct 12, 2025

Protective

protective relay is a device that detects the fault and initiates the operation of the circuit breaker to isolate the defective element from the rest of the system. The relays detect the abnormal conditions

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Lecture 5

Sensitivity refers to the minimal changes in measured parameter that the system can react to. For electromagnetic relays, this was a main design characteristic. Only the effected parts of the power

Nov 06, 2025

Sensitivity and Selectivity of Time Overcurrent Relay Protection in ...

The overcurrent relay protection is the most commonly used against line to line faults in medium voltage power lines. The main requirements for the relay protection are selectivity, sensitivity, quick operation

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Lecture 4 | PDF

This document discusses the desirable attributes of power system protection, including dependability, security, sensitivity, selectivity, reliability, and the

Oct 13, 2025

Terminologies used in Protective Relaying

A protective relay is a device that is used to protect electrical equipment from damage or failure. It is designed to detect abnormal conditions,

Aug 03, 2025

Selectivity and sensitivity of overcurrent relay protections

The paper discusses the conditions for setting the overcurrent protection and how they determine the sensitivity and selectivity of these protection in medium voltage power grids.

Nov 07, 2025

ASSESSING THE SENSITIVITY OF RELAY PROTECTION

One of the main requirements to relay protection is the sensitivity requirement, which implies consistent tripping during the short circuit (s c) events in the protected zone .

Feb 19, 2026

Microsoft Word

Each relay protection device comprises a definite-time delay overcurrent protection relay in which the trip of the current sensitive element starts the time delay device.

May 09, 2026

Essential Guide to Calibration of Protection Relays

Calibration of protection relays is critical to the reliability and safety of electrical power systems. This guide is designed to inform engineers, power

Dec 28, 2025

Desirable Attributes of Protection

Desirable Attributes of Protection The performance of an overcurrent relay was monitored over a period of one year. It was found that the relay operated 14 times, out of which 12 were correct trips. If the

Jun 17, 2026

Which of the following best defines the sensitivity of a protective relay?

Explanation: Sensitivity in protective relays refers to: The minimum fault current (or power, voltage, etc.) that the relay can reliably detect and respond to. A highly sensitive relay can

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PSM and TMS in Relay Protection Systems

The document discusses properties of protection schemes including sensitivity, selectivity, and speed. Sensitivity refers to the minimum fault current needed to

Mar 10, 2026

Module 1 : Fundamentals of Power System Protection

A relay is said to be dependable if it trips only when it is expected to trip. This happens either when the fault is in it's primary jurisdiction or when it is called upon to provide the back-up protection.

Jun 04, 2026

Basic protection relay knowledge

Protection is needed to detect electrical faults and abnormal operating conditions. Protection is also needed for protecting people and property around the power network. The protected zone is the part

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Power System Protective Relays: Principles & Practices

They are intended to quickly identify a fault and isolate it so the balance of the system continue to run under normal conditions. The selection and applications of protective relays and their associated

Aug 30, 2025

Relay protection sensitivity integrated optimal placement and capacity ...

The paper is structured as follows. Section 2 discusses the IIDG effect on the relay protection sensitivity and section 3 presents the relay protection sensitivity integrated optimization method. The IIDG

Feb 28, 2026

Module 6-Relay Setting Principles For Transmission

The document discusses relay setting principles for transmission line protection. It begins by outlining the four key characteristics of relay protection: selectivity,

May 15, 2026

Selectivity and sensitivity of overcurrent relay protections

The issues related to the fulfillment of the requirements for selectivity and sensitivity of the overcurrent protections are still relevant today, because the timely disconnection of the damaged equipment

Feb 21, 2026

Basic protection relay knowledge

Basic knowledge of protection relay ABB Protection relay and solution Objective Protection purpose and requirements Key terminology Selectivity Sensitivity

Jul 25, 2025

Research on the analysis method of power system relay protection

The action characteristics of power system relay protection devices can well analyze whether the relevant actions are correct. An analysis method of relay protection action characteristics

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(PDF) Prioritising the Protection Philosophy Elements of Speed ...

The protection philosophy is defined by sensitivity, selectivity, speed, dependability and security. This philosophy is implemented by selecting the type of protection, protection elements and

Nov 17, 2025

Basic Requirements of Protection System

Sensitivity of any protective scheme refers to the smallest value of actuating quantity at which it starts operating in relation with the minimum value of fault current in

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Maximizing Line Protection Reliability, Speed, and Sensitivity

I. INTRODUCTION Traditional protection systems consisted of a number of single-function electromechanical relays that provided good service for many years. However, providing redundancy

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