

Current direction at relay protection fault point



Overview

Consider a fault occurs at a point P. Hence the fault current flows from the generator G through the breaker A and E. Also the fault current comes from the breaker series A . This White Paper describes the sense, the potentials and the use of directional protection and directional zone selectivity functions, hereafter called “D” and “SdZ D” respectively. This selective operation helps avoid unnecessary tripping of circuit breakers and ensures that only the faulty section is isolated. Directional relays are not just overcurrent devices with extra logic. They compare current from CTs with voltage from PTs to determine the fault direction. I care. This practice-oriented paper shows, in addition to the illustrative explanation of the basis of ground fault parameters in insulated and arc-suppression-coil-ground systems, the connection variants for determination of the ground fault direction in detail.



Article Content

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Protection of Lines or Feeder

Protection of Radial Feeder In radial feeder, the power flows in one direction only, which is from source to load. This type of feeders can easily be

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Module 5 : Directional Overcurrent Protection

If the relay "detects fault" and current leads VR (= Vp), then inhibit the relay tripping. The "discrimination principle" based on phase angle comparison between a set of phasors, one of which is used as

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Directional Relays in Power Distribution - Principles

Directional relays are essential in such cases. For instance, in a 33 kV network with a solar farm, a directional overcurrent relay ensures proper

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Basic protection relay knowledge

Here, Several circuit breakers in the fault current paths from the generators to the fault location have been tripped. Note that all generators- the power sources - have been disconnected. Therefore, the

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Directional protection and directional

The PR123/P and the PR333/P units carry out excludable directional protection ("D") against short-circuit with adjustable fixed time active both with self-power-ing and with auxiliary supply. This protection

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DIRECTIONAL PROTECTION

But in modern networks with more than one power source, or in networks that have multiple lines for conveying electrical power the directional protection is essential in order to achieve selectivity.

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Fundamentals and Improvements for Directional Relays

ent did not correctly determine the fault direction. This was because of the lack of negative-sequence current from the pure zero-sequence source (wye-grounded transformer) behind

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Directionality Concepts for Overcurrent Relay Applications

ABB Inc. Abstract: Directional overcurrent protection IEEE device (67) refers to protection functions that utilize some angular relationship component of current or current and voltage to determine relay

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APN-C.013 Directional ground-fault protection

With the directional ground-fault detection, there is also a connection variant where the ground-current input is used, decoupled from the 3-phase current transformers.

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Types of Protective Relays

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

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How Does Directional Overcurrent Protection Work

Implementing directional overcurrent protection devices in electrical power grids increases reliability, safety, and selective tripping capabilities. By

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Directional protection and directional

This protection functionality is very similar to protection "S" with fixed time, with the capacity to recognize the current direction during the fault period as well.

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Directional protection equipment

Directional protection: protection equipment capable of detecting a fault upstream or downstream (in a given direction) of its position. Earth fault (e/f) protection: protection in which the residual variable

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Distance Protection Working Principle & Fault Location

Distance Protection Relay Working When the fault occurs at point X in the protected zone then the voltage drops while current increases. Thus the ratio of V/I . the

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The essentials of directional overcurrent protection in

Why directional overcurrent protection? Why do we use directional overcurrent protection? When does fault current direction become important?

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Fundamentals of Modern Protective Relaying

Protective Relays locate faults and trip circuit breakers to interrupt the flow of current into the defective component. This quick isolation provides the following benefits:

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Directional Relay: How to Better Understand?

Otherwise, it falls under reverse or external fault. Precise customizing capabilities of advanced digital relays are often set to this angle

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Directional Relays in Power Distribution – Principles

Directional Overcurrent Relays: These relays combine directional sensing with overcurrent protection, ensuring tripping occurs only when a fault in

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Microsoft Word

The protection relay adjustments are first calculated to provide the shortest tripping times at maximum fault currents and then verified to understand if tripping will also be acceptable at the minimum short

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Directional Over Current & Non Directional Over

Working Principle of Non Directional & Directional Over Current Protection: First of all, what is over current relay? The relay operates when the fault current

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Directional protection equipment

«earth fault» (e/f) directional protection is sensitive to the direction of flow of the current to earth. It is necessary to install this type of protection equipment whenever the phase to earth fault current is

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Distribution Automation Handbook

Time- and current-graded protection can be used in cases where the fault current magnitudes in faults occurring in front of and behind the relaying point are different.

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Directional Relays and Relay Testing: A Practical Guide

Directional relays are not just overcurrent devices with extra logic. They compare current from CTs with voltage from PTs to determine the fault

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RELAY SETTING CALCULATION

Calculation for Transformer Differential Protection 87T settings : ... Rated Current @ 67 MVA at Highest tap= $MVA \times 1000 / \sqrt{3} \times KV$ 299 A Rated Current @ 67 MVA at Nominal tap=

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Directional Relay | How it works, Application

Directional relays are protective devices that isolate faults in power systems by detecting the direction of fault currents. Directional relays play a

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Finding the Direction in Directional Overcurrent Relays

The fault current flows into the non-polarity mark of the CT connected to Circuit Breaker 4, so the Directional Overcurrent (67) relay sees the fault in the reverse

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POWER SYSTEM PROTECTION

Directional Overcurrent Protection Relay: These relays not only detect overcurrent conditions but also determine the direction of fault current flow. This is particularly useful for protecting transmission

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Directional Over Current & Non Directional Over

For Directional Over current relay, the fault current can flow in both the directions through the relay either forward or reverse, depending upon fault location.

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The essentials of directional protection and selectivity in

And because of this, the usage of directional protection is important in order to avoid disconnection of unnecessary circuits. As normal overcurrent

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