

Adding directional elements to relay protection



Overview

As normal overcurrent relays cannot provide this function, a directional unit is added to activate the relay when the fault current flow is in a predetermined direction. Improper selection and setting of such elements can cause relay misoperations and plant outages. Therefore, it is critical to. 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. The PR123/P and the PR333/P units carry out excludable directional protection (“D”) against short-circuit with. In these applications, modern directional elements provide an output signal to control the operation of the sensing elements or a restraining torque in the case of electromechanical relays. " However, to maintain. The direction of current flow is a significant characteristic of generators: if reverse current is driven into either a DC or AC generator, it will act as a load and prevent the device from operating at its proper generating capacity. In fact, in almost all situations. Directional Elements used in L-PRO 4000: How to Set Directional Control in Overcurrent Elements in The directional element considers negative-sequence impedance, zero-sequence impedance, or positive-sequence impedance, depending on relay settings and system conditions at the time of the fault.



Article Content

Dec 06, 2025

Directionality Concepts for Overcurrent Relay Applications

This paper will provide a brief discussion on past polarization methods on EM relays but will highlight newer, more reliable, directional functionality available in microprocessor relays.

Mar 04, 2026

Fundamentals and improvements for directional relays

Using field and laboratory data, this paper reviews fundamentals, discusses the limits to sensitivity, and shows how and why directional element designs have progressed. The paper also ...

Apr 28, 2026

Directional protection equipment

Directionalized overcurrent (see fig. 10) This type of directional relay is made by combining overcurrent protection equipment with an equipment to measure the phase displacement between the current ...

Apr 05, 2026

Fundamentals and Improvements for Directional Relays

Costello, Schweitzer Engineering Laboratories, Inc. Abstract—Phase and ground directional elements are relied on for fast and secure protection throughout the power system. ...

Jun 26, 2026

Directional Elements In Power System Protection

In these applications, modern directional elements provide an output signal to control the operation of the sensing elements or a restraining torque in the case of electromechanical relays....

Jan 05, 2026

The essentials of directional protection and selectivity in modern ...

And because of this, the usage of directional protection is important in order to avoid disconnection of unnecessary circuits. As normal overcurrent relays cannot provide this function, a ...

Nov 04, 2025

Directional Elements in L-PRO 4000

This directional control for overcurrent elements is coming from bus and transformer protection practice (used in our B-PRO and T-PRO relays). An important consideration for setting this Directional ...

Nov 18, 2025

Directional Element Design and Evaluation

When you apply an overcurrent relay in a looped or networked system, the protective relay needs a directional element to determine fault direction. Directional overcurrent relays can be ...

Sep 17, 2025

Directional protection and directional

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.

Feb 27, 2026

Directional Overcurrent (67) Protection

Thus, an AC directional protective relay requires at least two signal inputs: one representing line current to be monitored, and another serving as a polarizing or reference quantity to be used for phase ...

Aug 09, 2025

Directional Control in Protective Relays | How to Set Directional ...

In this video we go over how to set up a directional control element and use it to torque control a ground inverse-time overcurrent element using the SEL-351S protective relay.

Contact Us

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

Website: <https://chromadecksigns-eastrand.co.za>

Email: sales@chromadecksigns-eastrand.co.za

Phone: +32 2 318 5792

Address: Avenue Louise 500, 1050 Brussels, Belgium

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

