

Frontiers of Digital Relay Protection Filtering

This paper will investigate the effect of digital filtering on the operating time of a generic digital distance relay. Two popular filtering approaches will be considered: the Cosine Filter and the Fourier Filter.

This paper presents the theory, implementation, laboratory test results, and a field case example of a new filtering method for protective relaying based on window resizing.

Next, this framework is applied to two representative line-protection schemes - line distance protection and line differential protection - for quantitative evaluation under PEDG conditions.

Integrated Services Digital Network (ISDN) and Digital Subscriber Line (DSL) technologies, designed for the telecommunications industry, show promise for relay applications due to increased speed and ...

By integrating various intellectual property (IP) cores into the FPGA, a system-on-chip with complex functions and high reliability can be realized. System-on-chip (SoC)-based relay ...

In this discussion, we first identify filtering requirements or criteria for different relays. We then limit the discussion to relays needing precise measurements of the system- frequency component of the ...

When one converts from analogue to digital protection systems, there are new issues and opportunities. Digital relays can achieve more, are more accurate, and can achieve more than one ...

This paper describes an in-depth signal processing analysis of the second-order Taylor-Kalman-Fourier (TKF) filter as input signal to a phase comparator in digital distance relay.

In the present paper, a comparative evaluation of different digital filtering algorithms for distance protection is performed. An evaluation method is proposed, which gives a comprehensive information ...

The relay protection SoC usually uses a relatively small FPGA, which is convenient for processing the data stream (data communication, filtering, etc.) of the chip.

While the fundamental principles remain the same, as already mentioned, new ways of extracting relaying information from transducer signals are now possible. The first comprehensive survey of the ...

Advancements in digital technology have allowed relay manufacturers to include more and more relay functions within a single hardware platform. This paper presents digital power system protection ...

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The document discusses the basic components and design of digital relays. It describes anti-aliasing filters, amplitude and phase response, and compares ...

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