Commonly Used Relay Protection Device Numbers

Article Overview

ANSI/IEEE device numbers are standardized codes used to identify protective relays and related devices in electrical power systems, facilitating clear documentation and system design.

Overview of ANSI Device Numbers

ANSI/IEEE C37.2 defines device numbers to identify protective relays, circuit breakers, and other control devices in power systems. Each number corresponds to a specific function, such as overcurrent protection, voltage monitoring, or differential protection. Historically, each protective function had a dedicated electromechanical device, but modern microprocessor-based relays can perform multiple functions, often denoted as a multifunction device (11) in documentation .

Common Protective Relay Device Numbers

Some widely used ANSI device numbers include :

o 50 - Instantaneous Overcurrent Relay
o 51 - Time Overcurrent Relay
o 27 - Undervoltage Relay
o 59 - Overvoltage Relay
o 87T - Transformer Differential Relay
o 87G - Generator Differential Relay
o 86 - Lockout Relay
o 49 - Thermal Overload Relay Suffix letters or numbers are often added to clarify the application:
o G - Ground (e.g., 51G for ground overcurrent) or Generator (87G)
o N - Neutral connection (e.g., 59N for neutral displacement)
o T - Transformer (87T)
o F - Field or fuse
o Numeric suffixes (e.g., 51-1, 51-2) distinguish multiple devices of the same type in a system .

Multifunction Relays

Modern relays can combine multiple functions. For example, a 27/59 relay combines undervoltage and overvoltage protection. In such cases, the device number indicates all functions performed, and documentation like single-line diagrams uses these numbers to show the specific protective roles .

Directional Overcurrent Protection

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Directional overcurrent relays require both current and voltage inputs to determine the fault direction. Unlike non-directional overcurrent relays, which trip when current exceeds a set value, directional relays trip the circuit breaker only if the fault occurs in the predefined direction, enhancing selective protection in complex networks .

Summary

ANSI/IEEE device numbers provide a standardized method to identify protective relays and control devices, ensuring consistent communication in design, operation, and maintenance of electrical power systems. Understanding these numbers, suffixes, and multifunction applications is essential for engineers working with protective relaying and system protection.

Device numbers such as 50, 51, 52, 87, and 21 are commonly associated with ANSI/IEEE device function numbering,

Protective relays are commonly referred to by standard device numbers. For example, a time overcurrent relay is

This document lists standard electrical power system device function numbers from ANSI C37.2. It includes 99 device functions

In North America protective relays are generally referred to by standard device numbers. Letters are sometimes added to specify the

The protection and control devices in electrical equipment can be referred to by numbers, with appropriate suffix letters when

Protective relays are designed by using standard device numbers to describe its functionality. Instead of verbal

Device numbers 87T and 87M indicate differential protective relays, but their applications differ based on the equipment they protect.

Device numbers are used to identify functions of devices shown on a schematic diagram. One physical device may correspond to

This document lists standard device numbers for protective relays used in North America according to ANSI/IEEE Standard C37.2

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ECE 525 Power Systems Protection and Relaying Session 3, Page 1/1 Fall 2018 ANSI/IEEE Standard Device Numbers In North

ANSI Standard Device Numbers & Common Acronyms ANSI Standard Device Numbers & Common Acronyms

The document discusses the ANSI/IEEE standard for protective device numbering and function identification. It provides a list of 42

ANSI/IEEE Relay Device Numbers List This document lists standard device numbers for protective relays used in North America

Hier sollte eine Beschreibung angezeigt werden, diese Seite lässt dies jedoch nicht zu.

In the design of electrical power systems, the ANSI Standard Device Numbers (ANSI /IEEE Standard C37.2) denote

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