Relay Protection Type Code

Overview

In the design of electrical power systems, the ANSI Standard Device Numbers denote what features a protective device supports (such as a relay or circuit breaker).

Key Takeaways

Relay protection codes are standardized ANSI/IEEE device numbers used to identify protective relays and their specific functions in electrical power systems. Overview of ANSI/IEEE Device NumbersANSI/IEEE device numbers are defined in ANSI/IEEE Standard C37. 2 and are widely used in North America to identify protective relays, circuit breakers, and other control devices in power systems.

Each number corresponds to a specific protective function. Historically, each device performed a single function, but modern microprocessor-based relays can perform multiple functions, often indicated by combined device numbers.

Common Device Numbers

Some of the most frequently used relay protection codes include: 50 – Instantaneous Overcurrent Relay51 – Time Overcurrent Relay27 – Undervoltage Relay59 – Overvoltage Relay87T – Transformer Differential Relay87G – Generator Differential Relay86T – Lockout Relay for Transformer50N / 51N – Neutral Overcurrent RelaysSuffixes and LettersLetters or numbers can be added to device numbers to indicate specific applications or conditions: G – Ground (e.g., 51G for time overcurrent ground relay) or Generator (e.g., 87G for generator differential)T – Transformer (e.g., 87T for transformer differential)N – Neutral (e.g., 59N for neutral overvoltage)F – Field or Fuse (e.g., protective fuse for a pickup transformer) These suffixes help clarify the exact function or location of the relay in the system.

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Multifunction Relays

Modern relays often combine multiple functions into a single device. For example: 27/59 – Combined undervoltage and overvoltage relay50/51 – Instantaneous and time overcurrent relay In documentation such as single-line diagrams, these codes indicate which protective functions are implemented, making it easier for engineers to understand system protection schemes.

Practical Use

Relay protection codes are essential for: Designing and documenting protection schemesCoordinating relays for selective trippingTroubleshooting faults and system eventsEnsuring compliance with industry standards By using ANSI/IEEE device numbers, engineers can communicate relay functions clearly across different systems and manufacturers, even in regions where IEC standards are also used. In summary, relay protection codes provide a standardized method to identify and document the protective functions of relays, ensuring reliable and coordinated operation of electrical power systems.

Article Content

Protection Relay

In the design of electrical power systems, the ANSI Standard Device Numbers denote what features a protective device supports (such as a relay or circuit breaker). These types of

Protection and Control Device Numbers and Functions

The protection and control devices in electrical equipment can be referred to by numbers, with appropriate suffix letters when necessary, according to the functions they perform.

ANSI codes and IEC Relay Symbols – Electrical Engineering

To assist the Protection Engineer in converting from one system to the other, a select list of ANSI device numbers and their IEC equivalents are given in the following figure.

ANSI Relay Protection Code List | PDF | Relay | Detector (Radio)

This document lists 57 ANSI codes and their corresponding descriptions of protection devices and functions.

Protection relay selection table

Protection relay selection table Please note before using selection table! number = Number of stages, shots, X = Function supported inputs or outputs O = Function available as option

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ANSI (IEEE) Protective Device Numbering

Protective relays are commonly referred to by standard device numbers. For example, a time overcurrent relay is designated a 51 device, while an instantaneous overcurrent is a 50 device.

Table of ANSI IEEE Standard Device Numbers

This table details ANSI IEEE Standard Device Numbers as used for protective relaying in North America. Suffixes for numbers are also suggested.

Practical handbook for relay protection engineers | EEP

This handbook covers the code of practice in protection circuitry including standard lead and device numbers, mode of connections at terminal strips, colour codes in multicore cables, dos

Protection Relay Code Overview | PDF | Relay | Transformer

This document discusses numerical codes and symbols used to define protection relays according to IEEE and IEC standards. It provides examples of common numerical codes like 21 for distance relay

ANSI Codes for Protection Relays | PDF | Relay | Switch

The ANSI has standardized codes for protective relay functions, with each function assigned a specific number. Some common codes include 50 for instantaneous overcurrent protection, 59 for

ANSI Relay Codes and Protection Types | PDF

This document lists various types of relay codes used for protection and control in electrical systems. Some of the relay codes listed include 27 for undervoltage protection, 50 for instantaneous

ANSI Relay Protection Code List

This document lists 57 ANSI codes and their corresponding descriptions of protection devices and functions. The codes cover a wide range of protection devices including overcurrent, undercurrent,

ANSI/IEEE Relay Protection Codes

This document lists ANSI/IEEE protection codes that are used to identify different types of protective relay devices and monitoring equipment. There are over 100 codes listed ranging from 1 to 99 for

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Protection relay testing and diagnostic solutions

Verify protection schemes during commissioning and maintenance to ensure reliable system operation. Megger''s relay testing solutions help prevent

ANSI/IEEE Relay Protection Codes Guide

This document lists standard device numbers for protective relays used in North America according to ANSI/IEEE Standard C37.2-2008. The numbers are used to refer to different types of relays, with the

Power System Protective Relays: Principles & Practices

Abstract: Protective relays and devices have been developed over 100 years ago to provide “last line” of defense for the electrical systems. They are intended to quickly identify a fault and isolate it so the

ANSI Device Numbers for Relays | PDF | Relay | Switch

Ansi Code for Protective Relay - Free download as PDF File (.pdf), Text File (.txt) or read online for free. ANSI device numbers denote the functions of protective devices like relays and circuit breakers.

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

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