

Article Overview

Relay protection devices are numbered according to the ANSI/IEEE C37.2 standard, using numeric codes for functions, optional letters for specific applications, and combinations for multifunction relays.

ANSI/IEEE Device Numbering

Protective relays in power systems are identified using standard device numbers defined in ANSI/IEEE C37.2. Each number corresponds to a specific protective function:

- o 50 - Instantaneous overcurrent relay
 - o 51 - Time overcurrent relay
 - o 27/59 - Under/over voltage relay
 - o 87T - Transformer differential relay
 - o 87G - Generator differential relay
- When a relay performs multiple functions, numbers can be combined, e.g., 50/51 for an instantaneous/time overcurrent relay .

Suffix Letters and Numbers

Letters and numbers are added to clarify the relay's application:

- o G - Ground (e.g., 51G for ground overcurrent) or Generator (87G)
- o T - Transformer (87T)
- o N - Neutral connection (e.g., 59N for neutral overvoltage)
- o X, Y, Z - Auxiliary devices
- o F - Field or fuse
- o Numeric suffixes - Distinguish multiple devices of the same type in one system (e.g., 51-1, 51-2), .

Practical Plate Numbering

Relay protection plates and terminal strips use these numbers to label relays, contacts, and wiring:

- o Device numbers are placed near the relay on the plate or schematic.
- o Suffixes indicate the specific application or connection.
- o Multifunction relays are labeled with all relevant device numbers (e.g., 50/51/51G).
- o Terminal strips follow a consistent numbering scheme to match relay contacts with control and trip circuits, ensuring clarity for maintenance and troubleshooting .

Key Principles

Relay Protection Plate Numbering Rules

- o Clarity - Only use prefixes or suffixes that provide meaningful information.
- o Consistency - Maintain the same numbering across schematics, plates, and wiring diagrams.
- o Function Identification - Each relay's primary function must be clearly indicated to ensure proper protection coordination.
- o Documentation - ANSI numbers are used in single-line diagrams, instruction manuals, and relay panels for easy identification . By following these rules, relay protection systems are easily understandable, maintainable, and safe, allowing engineers to quickly identify and operate protective devices during faults or maintenance.

This document discusses numerical codes and symbols used to define protection relays according to IEEE and IEC standards. It

This document provides symbols and designations for relay protection devices based on IEC 617 standards. It includes: 1) Block

By utilizing the following three-digit dash number and assurance levels, a standardized set of test and process requirements are

Abstract: Protective relays and devices have been developed over 100 years ago to provide "last line" of defense for the electrical

This handbook covers the code of practice in protection circuitry including standard lead and device numbers, mode of

The widely used United States standard ANSI/IEEE C37.2 "Electrical Power System Device Function Numbers,

In electric power systems and industrial automation, ANSI Device Numbers can be used to identify equipment and devices in a

Traditionally, protective relays were electromechanical devices utilizing induction disk, coils, contacts, and solenoid elements to

Protective relay functions are typically represented in single-line electrical diagrams as circles, with the ANSI/IEEE number code

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

Relay Protection Plate Numbering Rules

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

This document provides an overview of schematic drawing standards used to represent electrical equipment and circuits. It

IEC Protection relay Codes.pdf - Free download as PDF File (.pdf), Text File (.txt) or read online for free.

ACKNOWLEDGEMENTS The "Hand Book" covers the Code of Practice in Protection Circuitry including standard lead and device

Time-graded protection is implemented using overcurrent relays with either definite time characteristic or inverse time characteristic.

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