Relay protection terminal number segment



Overview

In electric power systems and industrial automation, ANSI Device Numbers can be used to identify equipment and devices in a system such as relays, circuit breakers, or instruments. The device numbers are enumerated in ANSI/IEEE Standard C37.2 Standard for Electrical Power System Device Function Numbers, Acronyms, and Contact Designations.

Key Takeaways

Relay protection terminal numbers are based on ANSI/IEEE device numbers, with optional suffixes or segments to indicate specific functions, applications, or multiple devices. ANSI/IEEE Device NumberingProtective relays in electrical systems are commonly identified using ANSI/IEEE device numbers, standardized under IEEE C37.2.

Each number corresponds to a specific protective function. For example: 50 – Instantaneous overcurrent relay51 – Time overcurrent relay27 – Undervoltage relay59 – Overvoltage relay87T – Transformer differential relay86T – Transformer lockout relay These numbers allow engineers to quickly identify the type of protection a relay provides in schematics or control diagrams.

Suffixes and Segments

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

Suffix letters or numbers are added to device numbers to indicate specific applications or multiple instances: G – Ground (e.g., 51G for ground overcurrent) or Generator (e.g., 87G for generator differential)N – Neutral connection (e.g., 59N for neutral displacement protection)F – Field or fuse (e.g., protective fuse for a pickup transformer)X, Y, Z – Auxiliary devicesNumeric suffixes – Distinguish multiple devices of the same type in the same equipment (e.g., 51–1, 51–2) These suffixes form the terminal number segment, which helps identify the exact relay function and its connection in the system.

Multifunction Relays

Modern microprocessor-based relays can perform multiple protective functions. In such cases, a single device may carry multiple ANSI numbers, often separated by a slash: Example: 27/59 – A combined undervoltage/overvoltage relayExample: 50/51G – Instantaneous and time overcurrent ground relay Even when multiple functions are integrated, the terminal number segment in diagrams still references the individual ANSI numbers to indicate which function is being used.

Practical Use

In practice, the relay terminal number segment is used in: Single-line diagrams – To show which relay function protects which equipmentControl schematics – To identify relay terminals for wiring and testingDocumentation – To maintain clarity when multiple relays or multifunction devices are installed This system ensures consistent identification across equipment, making maintenance, troubleshooting, and protection coordination more efficient. By understanding the ANSI device number and its suffixes, engineers can accurately interpret relay functions and their terminal connections in any protection scheme.

Article Content

ANSI device numbers

In electric power systems and industrial automation, ANSI Device Numbers can be used to identify equipment and devices in a system such as relays, circuit breakers, or instruments. The device numbers are enumerated in ANSI/IEEE Standard C37.2 Standard for Electrical Power System Device Function Numbers, Acronyms, and Contact Designations. Many of these devices protect electrical systems and individual system components from damage whe

IEC Contactor and Overload Relay Terminal Numbering Explained ...

The IEC terminal numbering system provides unambiguous identification of contact functions. The first digit indicates the contact group, and the second digit distinguishes NO (1, 4, 7

Table of ANSI IEEE Standard Device Numbers

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

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

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.

Protection Basics

Ground fault protection for these systems is usually provided by residual protection, either calculated by relay or by external CT residual connection to IN input

Power System Protective Relays: Principles & Practices

(of a relay) The extent of the protection afforded by a relay in terms of the impedance or circuit length as measured from the relay location. Note: The measurement is usually to a point of fault, but excessive

Info Byte: What''s the Reason Behind Relay Terminal

Terminals are always 2-digit numbers, and both digits should be interpreted separately. The first digit identifies the set of contacts (or ''poles''),

Info Byte: What''s the Reason Behind Relay Terminal

Info Byte: What''s the Reason Behind Relay Terminal Numbering? Any industrial electrician can instantly recognize a relay, but when it comes to

Intro to Relays #2

Protective Relays are an advanced area of electrical engineering and contracting that can be intimidating, but they don''t have to be! This series of 3 articles will introduce basic relaying to the

Relay symbols and device numbers; selection from IEC 617-, IEEE

Annunciator relay is a nonautomati-cally reset device that gives a number of separate visual indications upon the functioning of protective devices and that may also be arranged to perform a lock-out function.

ANSI device numbers

In electric power systems and industrial automation, ANSI Device Numbers can be used to identify equipment and devices in a system such as relays, circuit breakers, or instruments. The device

What Are ANSI Relay Numbers? The Complete C37.2 Code List

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

Understanding power system protection requires familiarity with ANSI standard relay numbers. These codes, detailed in the IEEE C37.2 standard, offer a standardized way to identify the

Practical handbook for relay protection engineers | EEP

Relay protection circuitry 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

ANSI Device Numbers for Relays | PDF | Relay | Switch

ANSI device numbers denote the functions of protective devices like relays and circuit breakers. These devices protect electrical systems from damage during unwanted events. Device numbers identify

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

Relay Symbols & Device Numbers: IEC & IEEE Standards

Technical document detailing relay symbols, device numbers, and functions based on IEC 617 and IEEE C37.2 standards for switchgear.

ANSI (IEEE) Protective Device Numbering

The widely used United Sates standard ANSI/IEEE C37.2 ''Electrical Power System Device Function Numbers, Acronyms, and Contact Designations'' deals with protective device

ANSI/IEEE Protective Device Numbers | PDF | Relay | Switch

Print Version_ Ansi (Ieee) Protective Device Numbering - Free download as PDF File (.pdf), Text File (.txt) or read online for free. The document discusses the ANSI/IEEE C37.2 standard

Related Video Reference

This video was associated with the source search result. Verify technical details against current product documentation and project requirements.

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved

Additional source notes

In and , ANSI Device Numbers can be used to identify equipment and devices in a system such as , , or . The device numbers are enumerated in / Standard C37.2 Standard for Electrical Power System Device Function Numbers, Acronyms, and Contact Designations.
Many of these devices protect electrical systems and individual system components from damage whe...

Contact Us

Continue your research online:

Website: https://kenhardtprimary.co.za
Technical inquiry: https://kenhardtprimary.co.za/project-desk.html
African project coordination: Century City, Cape Town, Western Cape, South Africa

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

© 2026 KENHARDT OPTICAL NETWORKS - All rights reserved