

What is a relay protection number



Article Overview

A relay protection number is a standardized ANSI/IEEE device number that identifies the specific function of a protective relay in an electrical system.

Overview

Relay protection numbers are part of the ANSI/IEEE C37.2 standard, which assigns numerical codes to protective devices to describe their function concisely and consistently across electrical systems. Instead of using long verbal descriptions, these numbers allow engineers, technicians, and utilities to quickly identify the type of protection a relay provides, improving clarity in diagrams, specifications, and communication.

Common Examples

- 50 - Instantaneous overcurrent relay, trips immediately when current exceeds a set threshold.
- 51 - Time overcurrent relay, trips after a preset time delay when current exceeds a set value.
- 50N / 51N - Instantaneous or time overcurrent relays for neutral or ground currents.
- 27 - Undervoltage relay.
- 59 - Overvoltage relay.
- 87T - Transformer differential relay.
- 59G - Ground overvoltage relay. Multifunction relays may combine numbers, such as 27/59, indicating a relay that provides both under- and overvoltage protection

Article Content

Dec 31, 2025

Intro to Relays #2

Protective Relays are an advanced area of electrical engineering and contracting that can be intimidating, but they

Jan 08, 2026

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

These codes, detailed in the IEEE C37.2 standard, offer a standardized way to identify the function of protective

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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

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Protection relay selection table

Protection relay selection table Please note before using selection table! number = Number of stages, shots, X =

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Protective Relay Basics

Relay vs Low Voltage Circuit Breaker Symbols and Terminology Relay Individual symbols for each element ANSI / IEEE device

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Protection and Control Device Numbers and Functions

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

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What is Numeric Relay

The numeric relays are mostly used in the generating stations and substations for automated protection. These relay

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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

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Relay and Device Number List

The document lists over 100 device numbers and acronyms used for protective relays and devices in power systems. The numbers

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Intro to Relays #2

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

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Protection Relays Numbering (ANSI) | PDF

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

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A quick guide for ANSI relay protection codes

Sometimes you can name them all in a heartbeat. Sometimes, you scratch your head to remember what is what. In this

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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

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To: [Customer Name]

ANSI/IEEE Standard Device Numbers In North America protective relays are generally referred to by standard device numbers.

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Protection Relay Code Overview

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

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ANSI (IEEE) Protective Device Numbering

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

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Numerical relay

Numerical relay Protective relay In utility and industrial electric power transmission and distribution systems, a numerical relay is a

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ANSI device numbers

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

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The Essentials Of Numerical Relays, Their Features And Important ...

The distinction between digital and numerical relays is particular to Protection. Numerical relays are natural

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Protection Relay : Circuit, Working, Types, Codes & Its Uses

Relays are generally available in different types like reed, protective, thermal, electromagnetism, reed, Buchholz relay,

May 21, 2026

Practical handbook for relay protection engineers | EEP

Relay protection circuitry This handbook covers the code of practice in protection circuitry including standard lead and

Aug 02, 2025

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

Understanding power system protection requires familiarity with ANSI standard relay numbers. These codes, detailed

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IEC Protection Relay Codes PDF

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

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Basic protection relay knowledge

Selectivity Selectivity is a mandatory requirement for all protection, but the importance of it depends on the application. For example,

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A quick guide for ANSI relay protection codes

In this article, I combined all the main IEEE/ANSI definitions for protection elements, possible extensions, and

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The facts about numerical relays that every electrical engineer should

The History of Numerical Relays The first protection devices based on microprocessors were employed in 1985. The

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What is a Protective Relay? Principle, Advantages, Applications

A protective relay is an electrical component that is designed to trip a circuit breaker when a fault is encountered or

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