Terminal numbers for relay protection measurements

Overview

The numbers 30, 85, 86, and 87 represent a standardized terminal numbering system defined by the DIN 72552 standard, originally developed for automotive applications but now widely adopted in various industrial settings. These terminal designations create a universal language for relay connections. The widely used United Sates standard ANSI/IEEE C37. Even in those parts of the world where IEC standards are predominate, the use of ANSI numbering. 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. These numbers are based on a system that is adopted by a standard for automatic switchgear by Institute of Electrical. In North America protective relays are generally referred to by standard device numbers. Letters are sometimes added to specify the application (IEEE Standard C37. The other is given in IEC 60617 and uses.

Article Content

Feb 23, 2026

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

Jan 02, 2026

ANSI device numbers

When one device performs several protective functions, it is typically denoted "11" by the standard as a "Multifunction Device", but ANSI Device Numbers are still used in documentation like single-line

Feb 10, 2026

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

Understanding ANSI standard relay numbers is crucial for anyone involved in electrical protection and control systems. These numbers, defined by the ANSI/IEEE C37.2 standard, provide a standardized

Mar 01, 2026

HANDBOOK

ACKNOWLEDGEMENTS The „Hand Book‟ covers the Code of Practice in Protection Circuitry including standard lead and device numbers, mode of connections at terminal strips, colour codes in multicore

Jun 30, 2025

Protective Device Settings | Delgado Relay Protection Reference

Once the settings are determined, relay engineers configure the protective devices accordingly. The procedure involves inputting the calculated settings into the device''s control panel

Mar 31, 2026

Essential Guide to Calibration of Protection Relays

Calibration of protection relays is critical to the reliability and safety of electrical power systems. This guide is designed to inform engineers, power

Nov 16, 2025

13 terms concerning relaying, measurements, and

13 terms concerning protective relays, measurements, and breakers used by protection engineers (on photo: SEL''s 351S Relay Module)

Apr 24, 2026

What Are The Numbers On A Relay

The numbers on a relay can be mysterious and confusing to a beginner, but they are actually quite simple to understand. Relays are incredibly

Feb 27, 2026

Transformer Protection Application Guide

Transformer Protection Application Guide This guide focuses primarily on application of protective relays for the protection of power transformers, with an emphasis on the most prevalent protection schemes

Nov 25, 2025

ANSI/IEEE Relay Device Numbers List

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

Jan 02, 2026

To: [Customer Name]

ANSI/IEEE Standard Device Numbers In North America protective relays are generally referred to by standard device numbers. Letters are sometimes added to specify the application (IEEE Standard

Apr 04, 2026

What does 30 85 86 87 mean on a relay?

Decode relay terminal numbers 30, 85, 86, 87 and their critical functions in industrial automation. Learn what each designation means for proper wiring and reliable system operation.

Sep 23, 2025

ANSI codes and IEC Relay Symbols – Electrical

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

Jul 13, 2025

Understanding Relays

They''re called DIN-standard relay terminal numbers; DIN stands for Deutsches Institut für Normung (German Institute for Standards). Sometime around the middle of the last century, German cars

Sep 09, 2025

Protection Relay Types and Testing Procedures

Discover the types of protection relays, their applications, and essential testing procedures to ensure grid reliability and safety. Learn about

Sep 28, 2025

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

Comparing these to the larger common double-pole relay, the 4PDT, we would also find all of the mysterious missing numbers in between those on the

Mar 16, 2026

Protection and Control Device Numbers and Functions

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

Sep 06, 2025

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

Mar 24, 2026

Protective Relay Basics Part 2

Part 1: Protective relay compared to low voltage circuit breaker. Review fundamental concepts, components, and terminology using the electromechanical overcurrent relay as a foundation.

Jun 09, 2026

Relay Settings Calculations

Introduction This technical report refers to the electrical protections of all 132kV switchgear. All calculations are based on the available documentation/ information. These settings may be

Dec 26, 2025

R e l a y S e l e c t i o n G u i d e

The principle of time overcurrent protection is that relays are applied appropriately at the terminals of zones, and each relay is then given both a current pickup and a time delay setting.

Feb 04, 2026

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.

Jul 13, 2025

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

Nov 11, 2025

Intro to Relays #2

This article will explain the basics of the relay numbers used to design a relay''s functionality.

Jul 01, 2025

Power System Protective Relays: Principles & Practices

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

Contact Us

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