NC of relay protection devices

Article Overview

NC refers to the "Normally Closed" contact in a protective relay, which remains closed under normal conditions and opens when the relay operates.

Definition and Function

In relay protection systems, NC (Normally Closed) contacts are electrical contacts that remain closed when the relay is in its normal, unenergized state. When the relay detects a fault or abnormal condition, the NC contact opens, interrupting the circuit it controls. This is commonly used for alarm circuits, interlocks, or control logic to indicate a fault or to de-energize equipment safely.

Role in Protective Relays

Protective relays often have multiple contacts, including NO (Normally Open) and NC (Normally Closed), to perform different control and signaling functions. For example:

• Alarm circuits: An NC contact can open to trigger an alarm when a fault occurs.
• Trip circuits: NC contacts may be used in series with control circuits to ensure that a breaker trips when the relay operates.
• Interlocks: NC contacts prevent certain operations unless the relay is in a safe state.

ANSI/IEEE Device Numbering Context

In North America, protective relays are identified by ANSI/IEEE C37.2 device numbe...

Article Content

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

The document discusses the ANSI/IEEE C37.2 standard for protective device numbering and function identification. It

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Introduction to Protective Relaying | Electric Power

Introduction to Protective Relaying What are Protective Relays, or Protection Relays? Protective relays are

Jul 27, 2025

Relays Part 4: The Protective Relay Basic Theory

The types of protective relays that exist are overcurrent, electromechanical, directional, distance, pilot, and differential

Feb 10, 2026

ANSI (IEEE) Protective Device Numbering

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

Apr 14, 2026

Fundamentals of Modern Protective Relaying

Where it is desired to have more time delay before element operates for purpose of coordinating with other protective relays or

Mar 09, 2026

Relays: How They Work, Types, Contacts & Power System Uses

Learn how relays work, relay types, NO/NC contacts, control vs protective relays, trip circuits, and power system

May 25, 2026

Protective relays and predictive devices | Eaton

Eaton''s protective relays provide you with unique microprocessor-based devices that eliminate

Aug 19, 2025

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

Nov 27, 2025

Intro to Relays #2

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

Apr 08, 2026

Relays: How They Work, Types, Contacts & Power System Uses

A practical engineering guide to how relays work, relay contacts, relay types, relay ratings, control circuits, and

Dec 01, 2025

What is NC and NO in Relay? | Explained

What is NC and NO in relay? Learn about the basics, functions, choosing applications, wiring techniques, and troubleshooting

May 19, 2026

Protection Basics

IEEE C37.2 Device Numbers 51 Time-overcurrent relay 50 Instantaneous-overcurrent relay 67 Directional-overcurrent

Dec 08, 2025

Protection Relay

In the design of electrical power systems, the ANSI Standard Device Numbers denote what features a protective

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Protective relay

Electromechanical protective relays at a hydroelectric generating plant. The relays are in round glass cases. The rectangular devices

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ANSI Standard Device Numbers & Common Acronyms

ANSI Standard Device Numbers & Common Acronyms ANSI Standard Device Numbers & Common Acronyms

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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 16, 2026

Relays vs. Circuit Breakers For Circuit Protection

Relays A relay is a switchable device that can be toggled electrically, so they are often used in switching and control

Jan 03, 2026

ANSI device numbers

Many of these devices protect electrical systems and individual system components from damage when an unwanted event occurs

Aug 23, 2025

Understanding Protection Relays – 50, 50N, 51, 51N

Understanding Protection Relays – 50, 50N, 51, 51N Learn about Understanding Protection Relays and how they

Sep 25, 2025

Relay Symbols and Device Numbers Guide

The document discusses various relay symbols and device numbers used in protective relaying based on IEC 617 and ANSI/IEEE

Apr 09, 2026

All Types of Relay Symbols and Its Basics

3.2 Why are Protection Devices used in a Relay? When an electromagnetic relay turns off,

Nov 14, 2025

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

Jun 10, 2026

Difference between NO and NC

NO and NC are terms that define the states of switches, sensors or relay contacts under when its coil is not excited. Difference

Mar 27, 2026

What Are NO And NC In Relays? | Understanding Relay Contacts

Once energized, the contacts close, allowing current to flow. In a Normally Closed (NC) relay, the contacts are closed by default,

Aug 03, 2025

Practical handbook for relay protection engineers | EEP

Relay protection circuitry This handbook covers the code of practice in protection circuitry

Dec 30, 2025

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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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

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ANSI Protective Device Numbering Guide | PDF | Relay | Switch

It provides a comprehensive list of the standard device numbers (such as 51 for time overcurrent relay and 50 for instantaneous

Jan 12, 2026

Protective Relays: Overcurrent and Safety Relays | TE

TE offers types of protective relays from overcurrent relays to safety relays that trips a circuit breaker when

Contact Us

For more information, pricing, or custom solutions, please contact us:

Website: https://www.chromadecksigns-eastrand.co.za
Email: sales@chromadecksigns-eastrand.co.za
Phone: +32 2 318 5792
Address: Avenue Louise 500, 1050 Brussels, Belgium

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