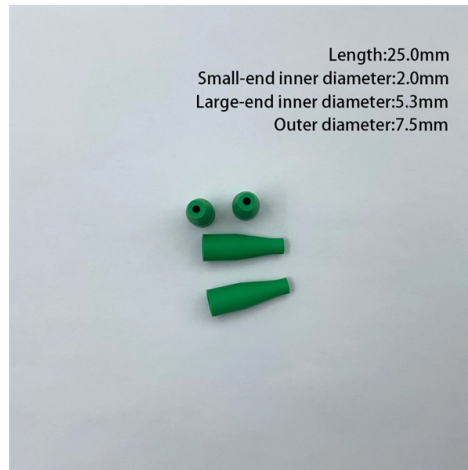


Latest version of relay protection standards



AI Overview

Modern relay protection standards focus on reliability, speed, coordination, and adaptation to power-electronics dominated grids, guided by IEEE C37.113-2025 and IEC 60255-1:2022. Key International Standards IEEE C37.113-2025 provides guidance for AC transmission line protection, covering relay characteristics, coordination of settings, operating times, mutual line coupling, and communication channel use. It helps engineers select and apply relays effectively to protect transmission lines while ensuring system stability and reliability. IEC 60255-1:2022 specifies common rules and requirements for measuring relays and protection equipment, including distributed protection schemes, control, monitoring, and process interface equipment. This standard ensures uniformity in testing, safety, and electromagnetic compatibility across modern relay technologies, including numerical and multifunctional devices.

Emerging Trends and Challenges The global energy transition and integration of renewable sources have led to power-electronics dominated grids (PEDGs). Traditional relay protection may be less effective in these systems, increasing the risk of mis-operation. IEC trend reports highlight the need for advanced protection strategies, updates to IEC 61850, and development of AI-based verification standards to maintain grid stability.

Practical Guidance for Engineers Practical handbooks emphasize: Relay selection and coordination for generators, transformers, lines, and capacitor banks. Testing and commissioning procedures, including station battery management and breaker trip circuits. Relay functional requirements: reliability, sensitivity, speed, and discrimination between fault and normal conditions. Types of relays: current, voltage, impedance, power, frequency, differential, directional, and distance relays, with definite-time, inverse-ti...

Article Content

BS EN IEC 60255-1:2022 Measuring relays and protection equipment

It provides a comprehensive set of common requirements for measuring relays and protection equipment, ensuring you have the knowledge and understanding to carry out your work to

PC37.113/D4.13, May 2025

PC37.113/D4.13, May 2025 - IEEE Draft Guide for Protective Relay Applications to Transmission Lines Scope: Concepts and applications of AC transmission line protection are presented in this guide.

PC37.90/D1, Sept 2024

This standard establishes a common reproducible basis for designing and evaluating relays and relay systems. Scope: This standard establishes the service conditions, ratings (electrical, thermal, and

BS EN IEC 60255-1:2022 Measuring relays and

29.120.70 Relays IEC 60255-1:2022 specifies common rules and requirements applicable to measuring relays and protection equipment, including

SIPROTEC Protection Relays | Siemens

High-performance protection Future-proof your power supply with protection relays and control for digital substations. SIPROTEC includes:

Microsoft Security Response Center Blog

A shared responsibility: Protecting customers through Coordinated Vulnerability Disclosure Wednesday, May 27, 2026 In recent weeks several zero-day vulnerabilities have been

EN IEC 60255-1:2023

These test requirements represent the electromagnetic compatibility immunity requirements and have been selected so as to ensure an adequate level of immunity for measuring

Microsoft Security Response Center Blog

Zero Day Quest 2026: \$2.3 million awarded for vulnerability research Monday, April 13, 2026 Protecting customers is at the core of Zero Day Quest. During the 2026 live hacking event,

Buy IEC 60255-1:2022 | Intertek Inform

Abstract IEC 60255-1:2022 specifies common rules and requirements applicable to measuring relays and protection equipment, including any combination of equipment to form a

Protection relays

Protection relays Numerical relays are based on the use of microprocessors. The first numerical relays were released in 1985. A big difference between

BS EN IEC 60255-26:2025

These test requirements represent the electromagnetic compatibility immunity requirements and have been selected so as to ensure an adequate level of immunity for measuring relays and protection

PC37.113/D3.5, Sept 2024

Scope: Concepts and applications of AC transmission line protection are presented in this guide. Many important issues, such as coordination of settings, operating times, characteristics of relays, mutual

IEEE Guide for Protective Relay Applications to Transmission Lines

The impact of different electrical parameters and system performance considerations on the selection of relays and protection schemes is discussed. The purpose of this guide is to provide a reference for

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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 systems. They are intended to quickly identify a fault and isolate it so the

C37.90.1-2024

This standard specifies design tests for relays, relay systems, and control devices used for the protection and control of electric power apparatus that relate to the immunity of this equipment to repetitive

IEC 60255-1:2022

All measuring relays and protection equipment used for protection within the power system environment are covered by this document. Other documents in this series can define their own requirements

IEC 60255 1xx: Protection relay functional standards for all

This identified a need for revising some of the existing standards and for developing new standards taking into account the high penetration of

IEC 60255-1 Ed. 2.0 b:2022

This document covers the main technologies in use today; other emerging technologies present specific EMC and safety issues but the philosophy in this

BS EN IEC 60255-1:2022

All measuring relays and protection equipment used for protection within the power system environment are covered by this document. Other documents in this series can define their

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IEC 60255-1:2022

This document covers the main technologies in use today; other emerging

BS EN IEC 60255-27:2025 Measuring relays and protection

Released on April 25, 2025, this standard is an essential resource for professionals in the electrical and electronics industry, ensuring that safety is prioritized in the design and implementation of critical

ANSI Standard Device Numbers & Common Acronyms

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

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