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IEEE Standard for Requirements, Terminology, and Test Procedures for Neutral Grounding Devices

IEEE Power and Energy Society

Sponsored by the
Transformers Committee

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USA

IEEE Std C57.32™-2015
(Revision of
IEEE Std 32™-1972)

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Abstract: This standard applies to devices used for the purpose of controlling the ground current or the potentials to ground of an alternating current system. These devices are: grounding transformers, ground-fault neutralizers, resistors, reactors, or combinations of these.

Keywords: arc-suppression reactors, ground fault neutralizers, grounding transformers, IEEE C57.32™, neutral grounding devices, reactors, resistors

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Introduction

This introduction is not part of IEEE Std C57.32-2015, IEEE Standard for Requirements, Terminology, and Test Procedures for Neutral Grounding Devices.

Historically this standard developed from AIEE Standard 32, 1947. The standard was substantially revised to become IEEE Std 32™ in 1972 and was reaffirmed in 1978, 1984, and 1990.

This standard is a revision of IEEE Std 32-1972, to which many changes have been made. The Standard 32 was originally developed by the Neutral Grounding Subcommittee of the Surge Protective Devices Committee of the IEEE Power Engineering Society. In 2003, the responsibility for upkeep and maintenance of this standard was transferred to the Performance Characteristics Subcommittee of the Transformers Committee of the IEEE Power and Energy Society.

This version is being published under a new number, C57.32, and has been completely revised to bring it in line with the current technology. Each grounding device now has its own section with all requirements and test methods included. Old test methods that were developed in the 1930s and 1940s have lost their relevance over time. Conservative calculation methods were lost in history and did not correlate to modern practices. To maintain a link to the old methods for now, Annex A is a copy of the old test code and is provided solely for reference purposes.

Note that capacitors have been removed from this standard. They had traditionally been used on occasion for front of wave surges. They are rarely used today. The use of capacitors has evolved into blocking devices in the neutral of transformers to block Geomagnetically Induced Currents (GIC) from Geomagnetic Disturbances (GMD). The IEEE Capacitor Subcommittee of the Transmission and Distribution Committee of PES has a task force that is handling this topic.

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IEEE Standard for Requirements, Terminology, and Test Procedures for Neutral Grounding Devices

1. Overview

1.1 Scope

This standard applies to devices used for the purpose of controlling the ground current or the potentials to ground of an alternating current system. These devices are: grounding transformers, ground-fault neutralizers, resistors, reactors, or combinations of these devices.

1.2 General considerations

The voltage, current, and insulation ratings for such devices shall consider their operation during normal and faulted system conditions. See also the IEEE C62.92™ series of guides [B29], [B30], [B31], [B32], and [B33] for additional information.[1,2,3]

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