NECA 409-2015

Standard for

Installing and Maintaining Dry-Type Transformers

AN AMERICAN NATIONAL STANDARD

Published by
National Electrical Contractors Association

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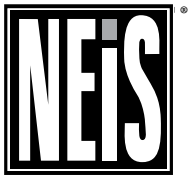

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(This foreword is not a part of the standard)

Foreword

National Electrical Installation Standards™ (NEIS™) are designed to improve communication among specifiers, purchasers, and suppliers of electrical construction services. They define a minimum baseline of quality and workmanship for installing electrical products and systems. *NEIS*™ are intended to be referenced in contract documents for electrical construction projects. The following language is recommended:

> Dry-type transformers should be installed and maintained in accordance with NECA 409-2015, *Standard for Installing and Maintaining Dry-Type Transformers* (ANSI).

Use of *NEIS* is voluntary, and the National Electrical Contractors Association assumes no obligation or liability to users of this publication. Existence of a standard shall not preclude any member or non-member of NECA from specifying or using alternate construction methods permitted by applicable regulations.

This publication is intended to comply with the edition of the National Electrical Code® (NEC®) in effect at the time of publication. Because they are quality standards, *NEIS* may in some instances go beyond the minimum safety requirements of the NEC. It is the responsibility of users of this publication to comply with applicable federal, state, and local electrical codes when installing electrical products and systems. Installers should also follow all manufacturer's installation instructions and ensure conformity to electrical ratings marked on such equipment.

Suggestions for revisions and improvements to this standard are welcome. They should be addressed to:

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1. Scope

1.1 Products and Applications Included

This standard describes the installation and maintenance procedures for single- and three-phase general purpose dry-type transformers and associated accessories rated 1000 Volts AC or less, and 0.25 kVA or more.

This publication applies to indoor and outdoor, ventilated and non-ventilated, two-winding transformers used for supplying power, heating, and lighting loads for commercial, institutional, and industrial use in nonhazardous locations both indoors and outdoors.

It also covers periodic routine maintenance and troubleshooting procedures for transformers, and special procedures used after adverse operating conditions such as a short-circuit, ground-fault, or immersion in water.

1.2 Products and Applications Excluded

This standard does not include:

- Transformers with one or more windings rated greater than 1000 Volts AC.
- Liquid-filled transformers.
- Autotransformers.
- Current transformers.
- Control transformers and transformers used with Class 2 and Class 3 circuits.
- Dry-type transformers that constitute a component part of other apparatus and comply with the requirements for such apparatus, including an X-ray, high-frequency, or electrostatic-coating apparatus.
- Transformers for sign and outline lighting, including electric-discharge lighting.
- Transformers used for power-limited fire alarm circuits.

1.3 Regulatory and Other Requirements

All information in this publication is intended to conform to the National Electrical Code® (ANSI/NFPA Standard 70). Installers shall follow the NEC®, applicable state and local codes, and manufacturer instructions, and contract documents when installing dry-type transformers.

Only qualified persons as defined in the NEC familiar with the construction and installation of dry-type transformers shall perform the technical work described in this publication. Administrative functions such as receiving, handling and storing required in Section 4, and other tasks may be performed under the supervision of a qualified person. All work shall be performed in accordance with NFPA 70E, *Standard for Electrical Safety in the Workplace.*

General requirements for installing electrical products and systems are described in NECA 1, *Standard for Good Workmanship in Electrical Construction* (ANSI). Other *NEIS* provide additional guidance for installing particular types of electrical products and systems. A complete list of *NEIS* is provided in Annex B.

1.4 Mandatory Requirements, Permissive Requirements, Quality and Performance Recommendations, Explanatory Material, and Informative Annexes

Mandatory Requirements. Mandatory requirements in manufacturer instructions, or of Codes or other mandatory Standards that may or not be