NEMA Standards Publication

NEMA 250-2014

Enclosures for Electrical Equipment (1000 Volts Maximum)

National Electrical Manufacturers Association

NEMA 250-2014

Enclosures for Electrical Equipment (1000 Volts Maximum)

Published by

National Electrical Manufacturers Association
1300 North 17th Street, Suite 900
Rosslyn, VA 22209

www.nema.org

NOTICE AND DISCLAIMER

The information in this publication was considered technically sound by a consensus among persons engaged in its development at the time it was approved. Consensus does not necessarily mean there was unanimous agreement among every person participating in the development process.

The National Electrical Manufacturers Association (NEMA) standards and guideline publications, of which the document herein is one, are developed through a voluntary standards development process. This process brings together volunteers and/or seeks out the views of persons who have an interest in the topic covered by this publication. Although NEMA administers the process and establishes rules to promote fairness in the development of consensus, it does not write the documents, nor does it independently test, evaluate, or verify the accuracy or completeness of any information or the soundness of any judgments contained in its standards and guideline publications.

NEMA disclaims liability for any personal injury, property, or other damages of any nature, whether special, indirect, consequential, or compensatory, directly or indirectly resulting from the publication, use of, application, or reliance on this document. NEMA disclaims and makes no guaranty or warranty, express or implied, as to the accuracy or completeness of any information published herein, and disclaims and makes no warranty that the information in this document will fulfill any particular purpose(s) or need(s). NEMA does not undertake to guarantee the performance of any individual manufacturer's or seller's products or services by virtue of this standard or guide.

In publishing and making this document available, NEMA is not undertaking to render professional or other services for or on behalf of any person or entity, nor is NEMA undertaking to perform any duty owed by any person or entity to someone else. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstance. Information and other standards on the topic covered by this publication may be available from other sources, which the user may wish to consult for additional views or information not covered by this publication.

NEMA has no power, nor does it undertake to police or enforce compliance with the contents of this document. NEMA does not certify, test, or inspect products, designs, or installations for safety or health purposes. Any certification or other statement of compliance with any health- or safety-related information in this document shall not be attributable to NEMA and is solely the responsibility of the certifier or maker of the statement.

TABLE OF CONTENTS

Tables

Figures

FOREWORD

This standards publication covers the classification and description of enclosures for electrical equipment. Enclosures for rotating apparatus have not been included. The primary purpose of this publication is to permit a potential user to determine:

1) The type of enclosure appropriate for the application.
2) The features the enclosure is expected to have.
3) The tests applied to the enclosure to demonstrate its conformance to the description.

These standards are used by the electrical industry to provide guidelines for the manufacture and proper application of enclosures and to promote the benefits of repetitive manufacturing and widespread enclosure availability.

Each type of enclosure is described in general and functional terms where practicable and omits reference to structural details and specific applications except where they are essential to the identification of the enclosure type. For such structural details and specific applications, see the appropriate NEMA product standards publication.

Individual product standards publications incorporating enclosure construction unique to the product design may reflect the type of designations contained herein provided the design tests for such construction equal or exceed the requirements of this standards publication.

User needs have been considered throughout the development of this publication. Proposed or recommended revisions should be submitted to:

Senior Technical Director, Operations
National Electrical Manufacturers Association
1300 N. 17th Street, Suite 900
Rosslyn, VA 22209

NEMA 250-2014 revises and supersedes NEMA 250-2008.

This standards publication was developed by the NEMA Enclosure Section of the National Electrical Manufacturers Association. Section approval of the standard does not necessarily imply that all section members voted for its approval or participated in its development. At the time it was approved, the Enclosure Section was composed of the following members:

Adalet	Cleveland, OH
Allied Moulded Products, Inc.	Bryan, OH
Boltswitch, Inc.	Crystal Lake, IL
Cooper B-Line	Sherman, TX
Eaton Corporation	Moon Township, PA
Emerson/EGS Electrical Group	Rosemont, IL
GE Energy, Industrial Solutions	Plainville, CT
Hoffman Enclosures Inc.	Anoka, MN
Hubbell Incorporated	Shelton, CT
Killark Electric Mfg. Company	St. Louis, MO
Rittal Corporation	Urbana, OH
Siemens Industry Inc.	Norcross, GA
Schneider Electric USA, Inc.	Lexington, KY
Stahlin Enclosures	Belding, MI
Thomas & Betts Corporation	Memphis, TN

Section 1
GENERAL

1.1 SCOPE

This standard covers enclosures for electrical equipment rated not more than 1000 Volts and intended to be installed and used as follows:

a. Non-hazardous (unclassified) locations:
   1) Enclosures for indoor locations, Types 1, 2, 5, 12, 12K, and 13; and,
   2) enclosures for indoor or outdoor locations, Types 3, 3X, 3R, 3RX, 3S, 3SX, 4, 4X, 6, and 6P.

b. Hazardous (classified) locations:
   1) Enclosures for indoor locations, Types 7 and 9;
   2) Enclosures for indoor or outdoor locations, Type 8; and,
   3) Enclosures for mining applications, Type 10.

Requirements for enclosures for non-hazardous (unclassified) locations are contained in the body of the standard. Requirements for enclosures for hazardous (classified) locations are contained in Annex A of the standard.

This standard covers the requirements to provide protection to the enclosed equipment against specific environmental conditions.

This standard supplements requirements for enclosures that are contained in the individual product standards.

This standard does not cover the requirements for protection of the enclosed equipment against conditions such as condensation, icing, corrosion, or contamination, which may occur within the enclosure or which may enter via conduit or unsealed openings.

A product that contains features, characteristics, components, materials, or systems new or different from those in use when the standard was developed, and that involves a risk of fire, electric shock, or injury to persons shall be evaluated using the appropriate additional component and end-product requirements as determined necessary to maintain the level of safety for the user of the product as originally anticipated by the intent of this standard.

1.2 REFERENCES

The following documents contain provisions, which through reference in this text constitute provisions of this standards publication. By reference herein these publications are adopted, in whole or in part as indicated in this publication.

American National Standards Institute (ANSI)
11 West 42nd Street
New York, NY 10036

American Society of Mechanical Engineers (ASME)
345 East 47th Street
New York, NY 10017-2392

ANSI/ASME B1.20.1 *Pipe Threads, General Purpose (In)*