CANADIAN STANDARDS ASSOCIATION

C22.2 No. 5-09

Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures

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The most recent designation of ANSI/UL 489 as an American National Standard (ANSI) occurred on September 1, 2009. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page (front and back), or the Preface.

The Department of Defense (DoD) has adopted UL 489 on January 18, 1985. The publication of revised pages or a new edition of this Standard will not invalidate the DoD adoption.

NEMA (National Electrical Manufacturers Association) has adopted UL 489 (US Requirements) on August 11, 1993 as NEMA Standard AB1. The publication of revised pages or a new edition of this Standard will not invalidate the NEMA adoption.

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Preface

This is the harmonized ANCE, CSA, and UL standard for Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures. It is the third edition of NMX-J-266-ANCE, the second edition of CSA C22.2 No. 5, and the eleventh edition of UL 489. This edition of NMX-J-266-ANCE cancels the previous edition published in 1999. This edition of CSA C22.2 No. 5 supersedes the previous edition published in 2002. This edition of UL 489 supersedes the previous edition published in 2002.

This harmonized standard was prepared by the Association of Standardization and Certification (ANCE), the Canadian Standards Association (CSA), and Underwriters Laboratories Inc. (UL). The efforts and support of the CANENA Technical Harmonization Committee are gratefully acknowledged.

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

The present Mexican Standard was developed by the CT CDI Control y Distribución Industrial from the Comite de Normalizacion de la Asociacion de Normalizacion y Certificacion, A.C., CONANCE, with the collaboration of the circuit breaker manufacturers and users.

This standard was reviewed by the CSA Subcommittee on Molded Case Circuit Breakers under the jurisdiction of the CSA Technical Committee on Industrial Products and the CSA Strategic Steering Committee on Requirements for Electrical Safety, and has been formally approved by the CSA Technical Committee.

This standard has been approved by the American National Standards Institute (ANSI) as an American National Standard.

Where reference is made to a specific number of samples to be tested, the specified number is to be considered a minimum quantity.

> **Note:** *Although the intended primary application of this standard is stated in its scope, it is important to note that it remains the responsibility of the users of the standard to judge its suitability for their particular purpose.*

Level of harmonization

This standard uses the IEC format but is not based on, nor is it considered equivalent to, an IEC standard. This standard is published as an equivalent standard for ANCE, CSA, and UL.

An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical national differences are allowed for codes and governmental regulations as well as those recognized as being in accordance with NAFTA Article 905, for example, because of fundamental climatic, geographical, technological, or infrastructural factors, scientific justification, or the level of protection that the country considers appropriate. Presentation is word for word except for editorial changes.

Reasons for differences from IEC

This standard provides requirements for molded-case circuit breakers, molded-case switches, and circuit-breaker enclosures for use in accordance with the electrical installation codes of Canada, Mexico, and the United States. At present there is no IEC standard for these products for use in accordance with these codes. Therefore, this standard does not employ any IEC standard for base requirements.

Interpretations

The interpretation by the standards development organization of an identical or equivalent standard is based on the literal text to determine compliance with the standard in accordance with the procedural rules of the standards development organization. If more than one interpretation of the literal text has been identified, a revision is to be proposed as soon as possible to each of the standards development organizations to more accurately reflect the intent.

ANCE effective date

The effective date for ANCE will be announced through the Diario Oficial de la Federación (Official Gazette) and is indicated on the cover page.

CSA effective date

The effective date for CSA International will be announced through CSA Informs or a CSA certification notice.

UL effective date

UL 489 is effective immediately.

A UL effective date is one established by Underwriters Laboratories Inc. and is not part of the ANSI approved standard.

INTRODUCTION

1 Scope

1.1 The requirements of this standard cover molded-case circuit breakers, circuit breaker and ground-fault circuit-interrupters, fused circuit breakers, and accessory high-fault protectors. These circuit breakers are specifically intended to provide service entrance, feeder, and branch circuit protection in accordance with the National Installation Codes in Annex B, Ref. No.1. This standard also covers instantaneous-trip circuit breakers (circuit interrupters) specifically intended for use as part of a combination motor controller in accordance with the National Installation Codes in Annex B, Ref. No. 1.

1.2 This standard covers molded-case switches and fused molded-case switches.

1.3 This standard covers devices rated at 600 volts or less and 6000 amperes or less.

1.4 The devices referenced in 1.1 and 1.2 are intended for installation in an overall enclosure or as parts of other devices such as panelboards. The acceptability of the combination will be determined when the complete product is investigated.

1.5 This standard covers circuit-breaker enclosures and accessory devices intended for use with the devices described in 1.1 and 1.2.

1.6 This standard does not cover low-voltage power circuit breakers covered in Annex B, Ref. No. 3 and Ref. No. 4 or supplementary protectors covered in Annex B, Ref. No. 5.

1.7 This standard contains supplements covering the requirements for molded-case circuit breakers for:

a) Marine Use;

b) Naval Use;

c) Uninterruptible Power Supply Use;

d) Classified Circuit Breakers; and

e) Software in Programmable Components.

2 Definitions

2.1 For the purposes of this standard, the following definitions apply.

2.2 ACCESSORIES – a device or devices that perform a secondary or minor duty as an adjunct or refinement to the primary or major duty of a molded case product.

2.3 ACCESSORY HIGH-FAULT PROTECTOR – a self-contained unit housing fuses or high-fault protectors constructed for use with specific molded case products and with provision for connecting directly to the load terminals of the molded case product.

2.4 ADJUSTABLE CIRCUIT BREAKER – a circuit breaker that has adjustable time/current tripping characteristics. These may include:

a) Inverse-time (such as continuous current, long time, and/or short time);