CSA GROUP™

CSA C22.2 No. 280:22
National Standard of Canada

Electric vehicle supply equipment

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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 to judge its suitability for their particular purpose.

National Standard of Canada

CSA C22.2 No. 280:22
Electric vehicle supply equipment

ICS 29.120.30; 43.120

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Standard for Safety for Electric Vehicle Supply Equipment

Third Edition, Dated December 15, 2022

Summary of Topics

This Third Edition of the Standard for Electric Vehicle Supply Equipment, dated December 15, 2022, includes the following revisions: a) Removal of requirement to fasten in place devices rated over 125 V; b) Increase voltage to 1000 V input; c) Revisions due to withdrawal of UL 2744; d) Location of interrupting device for personnel protection systems in EVSE in accordance with the NEC

Association of Standardization and Certification
NMX-J-677-ANCE-2022
Third Edition

CSA Group
CSA C22.2 No. 280:22
Third Edition

Underwriters Laboratories Inc.
UL 2594
Third Edition

Standard for Electric Vehicle Supply Equipment

December 15, 2022

ANSI/UL 2594-2022

Commitment for Amendments

This standard is issued jointly by the Association of Standardization and Certification (ANCE), the Canadian Standards Association (operating as “CSA Group”), and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the standard may be submitted to ANCE, CSA Group, or UL at anytime. Revisions to this standard will be made only after processing according to the standards development procedures of ANCE, CSA Group, and UL. CSA Group and UL will issue revisions to this standard by means of a new edition or revised or additional pages bearing their date of issue. ANCE will incorporate the same revisions into a new edition of the standard bearing the same date of issue as the CSA Group and UL pages.

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This Standard is subject to review within five years from the date of publication, and suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include "Proposal for change" in the subject line: Standard designation (number); relevant clause, table, and/or figure number; wording of the proposed change; and rationale for the change.

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This ANSI/UL Standard for Safety consists of the Third Edition. The most recent designation of ANSI/UL 2594 as an American National Standard (ANSI) occurred on December 15, 2022. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page (front and back), or the Preface.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at https://csds.ul.com.

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MARKINGS

INSTRUCTIONS

Preface

This is the harmonized ANCE, CSA Group, and UL Standard for Electric Vehicle Supply Equipment. It is the Third edition of NMX-J-677-ANCE, the Third edition of CSA C22.2 No. 280, and the Third edition of UL 2594. This edition of NMX-J-677-ANCE supersedes the previous edition published on December 21, 2016. This edition of CSA C22.2 No. 280 supersedes the previous edition published on December 21, 2016. This edition of UL 2594 supersedes the previous edition published on December 21, 2016.

This harmonized standard was prepared by the Association of Standardization and Certification (ANCE), CSA Group, and Underwriters Laboratories Inc. (UL). The efforts and support of the Technical Harmonization Working Group for Electric Vehicle Supply Equipment 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 reviewed and approved by the Comité de Normalización de la Asociación de Normalización y Certificación, A.C., CONANCE.

This standard was reviewed by the CSA Subcommittee on Electric Vehicle – Supply Equipment, 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 developed in compliance with the Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

Application of 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 considered equivalent to, an IEC standard.

This standard is published as an equivalent standard for ANCE, CSA Group, 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 general requirements for electric vehicle supply equipment 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.

INTRODUCTION

1 Scope

1.1 This Standard applies to conductive electric vehicle (EV) supply equipment with a primary source voltage of 1000 V ac or less, with a frequency of 50 or 60 Hz, and intended to provide ac power to an electric vehicle with an on-board charging unit. This Standard covers electric vehicle supply equipment intended for use where ventilation is not required.

1.2 With reference to 1.1, the following list of examples of electric vehicle supply equipment are included in this Standard:

a) EV Cord Sets – Rated 125 Vac maximum, 16 A maximum, intended for indoor and outdoor use;

b) Fastened in place EV Charging Stations – Rated 250 Vac maximum, 40 A maximum, intended for indoor or outdoor use;

c) Fixed in place EV Charging Stations – Rated 1000 Vac maximum, intended for indoor or indoor/outdoor use; and

d) Fixed in place EV Power Outlet – Rated 1000 Vac maximum, intended for indoor or indoor/outdoor use.

For Mexico, use 127 Vac where 120 or 125 Vac is referenced in this Standard. In Canada and the United States, this does not apply.

1.3 The products covered by this Standard are intended for use in accordance with the Installation Codes in Annex A, Ref. No. 1.

1.4 This Standard does not cover cord sets or power supply cords for applications other than EV charging cord sets. For cord sets and power supply cords not covered by this Standard, refer to Annex A, Ref. No. 2 and No. 3.

1.5 With reference to 1.2, this Standard does not cover electric vehicle charging equipment. For EV charging equipment not covered by this Standard, refer to Annex A, Ref. No. 4.

1.6 This Standard does not cover electric vehicle connectors. For electric vehicle connectors not covered by this Standard, refer to Annex A, Ref. No. 5

1.7 This Standard does not cover regular-use power outlets. For regular-use power outlets not covered by this Standard, refer to Annex A, Ref. No. 6.

1.8 This Standard does not cover equipment intended for wireless power transfer, which may also be designated as wireless charging, inductive charging, magnetic resonance charging, or any other similar designation indicating the transfer of power from the EVSE to the vehicle through other than a conductive connection.

2 Units of Measurement

2.1 The values given in SI (metric) units shall be normative. Any other values given shall be for information purposes only.