



**CSA C2.1:24**  
National Standard of Canada



# Single-phase and three-phase liquid-filled distribution transformers



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*CSA C2.1:24*

***Single-phase and three-phase  
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This edition of CSA 2.1 is dedicated to the memory of Saïd Hachichi of Hydro-Québec whose contributions helped make the publication of this document possible.

# Preface

This is the second edition of CSA C2.1, *Single-phase and three-phase liquid-filled distribution transformers*. It supersedes the previous edition published in 2006 and previous editions of CSA C2, *Single-Phase and Three-Phase Liquid-filled Distribution Transformers, Types ONAN and LNAN*, published in 1991, 1982, 1976, 1969, 1959, 1944, 1928, and 1920.

This edition includes requirements for single-phase, single-bushing, 60 Hz distribution transformers suitable for direct pole mounting and designed for operation on an effectively grounded wye system, Type ONAN, rated at 167 kVA or below, up to 34.5 kV system nominal voltage. Changes to this edition include updates to various clauses, tables, figures, and annexes to reflect minimum industry requirements.

This Standard specifies the requirements for distribution transformers intended primarily for operation by electric utilities. The operation of transformers complying with this Standard by other than an electric utility could be subject to additional requirements by the electrical inspection regulatory authority having jurisdiction.

CSA Group acknowledges that the development of this Standard was made possible, in part, by the financial support of Alectra Utilities, Electricity Canada (EC), EPCOR, FortisAlberta, FortisBC, Hydro One, Hydro-Québec, IFD Corp., K-Line Insulators Ltd., Maritime Electric, NB Power, Newfoundland and Labrador Hydro, Newfoundland Power, Nova Scotia Power, S&C Electric Canada Ltd., Schneider Electric Canada Inc., Toronto Hydro, and Utilities Standards Forum (USF).

This Standard was prepared by the Subcommittee on Overhead and Pad-Mounted Distribution Transformers, under the jurisdiction of the Technical Committee on Distribution Transformers and the Strategic Steering Committee on Power Engineering and Electromagnetic Compatibility, and has been formally approved by the Technical Committee.

This Standard has been developed in compliance with Standards Council of Canada requirements for National Standards of Canada. It has been published as a National Standard of Canada by CSA Group.

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