CSA GROUP™

CSA C22.2 No. 178.3:17
National Standard of Canada

Transfer switch equipment, over 1000 volts

Standards Council of Canada
Conseil canadien des normes

REVISED APRIL 2020

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Revision History

CSA C22.2 No. 178.3:17, Transfer switch equipment, over 1000 volts

Update No. 1 — April 2020	**Revision symbol (in margin)**
Cover, Copyright page, Preface, Clauses 33.1.1, 37.4, 41.1, 44.5, 47.2.1, 47.2.3, 49.3, and 54.3 and Table 7 **Note:** *Only the revised pages have been provided.*	|

National Standard of Canada — April 2020
Outside front cover, National Standard of Canada text, and title page. 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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National Standard of Canada

CSA C22.2 No. 178.3:17 ***Transfer switch equipment, over 1000 volts***

ICS 29.130.01

Standard for Safety for Transfer Switch Equipment, Over 1000 Volts, UL 1008A

First Edition, Dated September 5, 2017

Summary of Topics

The revision dated April 30, 2020 includes the following changes in requirements:

– Clarification of required frequencies for tests; 33.1.1, 37.4, 41.1, 44.5, 47.2.1, 47.2.3, 49.3, 54.3

– Correction to electrical endurance requirements; Table 7

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CSA Group
CSA C22.2 No. 178.3:17
First Edition

Underwriters Laboratories Inc.
UL 1008A
Second Edition

Transfer Switch Equipment, Over 1000 Volts

September 5, 2017

(Title Page Reprinted: April 30, 2020)

ANSI/UL 1008A-2020

Commitment for Amendments

This standard is issued jointly by 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 CSA Group or UL at anytime. Revisions to this standard will be made only after processing according to the standards development procedures of 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.

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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 Second Edition including revisions through April 30, 2020. The most recent designation of ANSI/UL 1008A as an American National Standard (ANSI) occurred on February 18, 2020. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page (front and back), or the Preface.

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PREFACE

This is the harmonized CSA Group, and UL standard for Transfer Switch Equipment – Over 1000 Volts. It is the First edition of CSA C22.2 No. 178.3, and the Second edition of UL 1008A. This edition of UL 1008A supersedes the First edition titled, Medium-Voltage Transfer Switches, published on March 30, 2012. This harmonized standard has been jointly revised on April 30, 2020. For this purpose, CSA Group and UL are issuing revision pages dated April 30, 2020.

This harmonized standard was prepared by the CSA Group and Underwriters Laboratories Inc. (UL). The efforts and support of the Technical Harmonization Subcommittee, THSC 121A WG8, Transfer Switches over 750V, on the Harmonization of Electrotechnical Standards of the Nations of the Americas (CANENA), are gratefully acknowledged.

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

This standard was reviewed by the CSA Subcommittee on High Voltage Transfer Switches, under the jurisdiction of the CSA Technical Committee on Industrial Products (TCIP) and the CSA Strategic Steering Committee on requirements for Electrical Safety (SCORES), and has been formally approved by the CSA 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.

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 is published as an equivalent standard for 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

There is no corresponding IEC standard.

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.

32 Other Transfer Switches

32.1 The performance of transfer switches other than those covered in 29 – 31 shall be investigated by subjecting a representative device or devices in commercial form to the tests described in 33 – 53 and 55. Unless otherwise indicated, the various shall be conducted at rated supply frequency and voltage.

32.2 The following tests shall be conducted on enclosed samples.

a) One sample shall be subjected to the Overload Test, 37; Temperature Test, 39; and either the Electrical Endurance Test, 38, or the Mechanical Endurance Test, 40 (as required). Upon completion of this test sequence the shall be subjected to the Dielectric Voltage-Withstand Test (Repeated), 43.

b) A previously untested sample may be used for conducting the Withstand Test, 44; and the Closing Test, 45.

c) A previously untested sample may be used for conducting the Dielectric Voltage-Withstand Test, 41 and the Impulse Voltage Withstand Tests, 52. The order in which these two tests shall be conducted not specified.
At the manufacturer's option, the Temperature Test, 39, may be conducted either after the Mechanical Endurance Test, 40, on a separate sample that has been previously subjected to an Overload Test, 37.

33 Operations Tests

33.1 Normal operational tests

33.1.1 To determine whether an automatic transfer switch complies with 16.1.3 through 16.1.4, the switch shall be mounted in the intended manner and the secondary control circuits for the normal and alternative supplies shall be energized using separate circuits of rated voltage. For normal operation tests, test frequency shall be at rated frequency. For devices rated 50/60Hz, tests other than described in 33.1.4 may be conducted at either frequency. For devices with multiple frequency ratings the test described in 33.1.4 shall be conducted at each rated frequency. Each test shall be conducted twice:

a) Once with all time delays set to their minimum value.

b) Once with time delays set at an intermediate value.

The transfer switch shall operate as intended during each test.

33.1.2 Operation on loss of supply voltage: With the transfer switch in the normal supply position, and with the secondary control circuits set to the rated value:

a) Interrupt one phase of the normal supply.

b) Restore the normal supply.

c) Repeat for each phase individually.

d) Operate the test switch.

33.1.3 Operation on reduction of supply voltage: With the transfer switch in the normal position, and with the secondary control circuits set to the rated value: