NATIONAL STANDARD
OF CANADA

CAN/ULC-S525:2016-REV1
(Including Revision 1)

AUDIBLE SIGNALING DEVICES FOR FIRE ALARM AND SIGNALING SYSTEMS, INCLUDING ACCESSORIES

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CETTE NORME NATIONALE DU CANADA EST DISPONIBLE EN VERSIONS FRANÇAISE ET ANGLAISE

Standard for Audible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories, CAN/ULC-S525:2016-REV1

Fourth Edition, Dated January 2016

Summary of Topics

The September 2017 revision of CAN/ULC-S525:2016 contains the following changes in requirements:

1. Revision of outdoor use enclosure requirements includes item ″c″ in Clause 5.2.8.1, which was accidentally omitted, to be consistent with CAN/ULC S526 and CAN/ULC-S541

2. Revisions to Clause 7.10, Abnormal Operation and Burnout Test, to resolve the binational differences between Canada and the United States and to insert any missing requirements that were accidentally omitted during the creation of the original binational document

3. Revisions to clarify the temperature conditioning requirements for indoor and outdoor use appliances in Mechanical Strength Tests for Enclosures (clauses 7.21.2.1 and 7.21.4)

4. Additional reference document changes and corrections to existing requirements in CAN/ULC-S525

The new and revised requirements are substantially in accordance with Proposal(s) on this subject dated November 18, 2016.

A "**(REV1)**" marker in Bold will be inserted at the start of the applicable Clause(s) and in the applicable Subsection title(s). The Subsection title markers will appear in the TOC as a result. The markers may be found by searching for the characters "(REVx)". Including the parenthesis in the search term will find the markers, without also finding every page header.

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This ANSI/UL Standard for Safety consists of the Tenth Edition including revisions through September 5, 2017. The most recent designation of ANSI/UL 464 as an American National Standard (ANSI) occurred on September 5, 2017. 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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International Classification for Standards (ICS): 13.220.20; 13.320.

This Standard has been developed in compliance with the requirements of SCC for accreditation of a Standards Development Organization.

The revision to the Fourth Edition of this ULC Standard was based on, and supersedes, the Fourth Edition.

Attention is drawn to the possibility that some of the elements of this Canadian standard may be the subject of patent rights. ULC Standards shall not be held responsible for identifying any or all such patent rights.

Requests for interpretation of this Standard should be sent to ULC Standards. The requests should be worded in such a manner as to permit a “yes” or “no” answer based on the literal text of the requirement concerned.

The review and action to revise or reaffirm this Standard will not exceed 5 years from the date of publication, unless the Standard is identified as fitting within a stabilized category, whereby the review will commence within the appropriate time frame set out by ULC Standards.

This Standard is intended to be used for conformity assessment.

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Preface

This is the common UL and ULC Standard for Audible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories. It is the fourth edition of CAN/ULC-S525 and tenth edition of ANSI/UL 464.

This Joint Standard was prepared by Underwriters Laboratories Inc., ULC Standards, and the NEMA Technical Harmonization Committee on Notification Appliances. The standard was formally approved by the UL Standards Technical Panel on Signal Appliances; and the ULC Technical Committee on Fire Alarm and Life Safety Equipment and Systems. The efforts and support of the NEMA Technical Harmonization Committee, the UL Standards Technical Panel, and the ULC Technical Committee are gratefully acknowledged.

Only metric SI units of measurement are used in this Standard. If a value for measurement is followed by a value in other units in parentheses, the second value may be approximate. The first stated value is the requirement.

In Canada, there are two official languages, English and French. All safety warnings must be in French and English. Attention is drawn to the possibility that some Canadian authorities may require additional markings and/or installation instructions to be in both official languages.

This standard has been approved as a National Standard of Canada by the Standards Council of Canada.

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

Annexes A, C, and E are identified as informative and are for informational purposes only. Annexes B and D are identified as normative and form a mandatory part of this Standard.

> **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 UL and ULC Standards. An equivalent standard is a standard that is substantially the same in technical content, except as follows: Technical deviations are allowed for codes and governmental regulations and 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 to be word for word except for editorial changes.

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.

1 Scope

1.1 This standard applies to electrically operated bells, sirens, horns, and similar audible signaling devices, rated at 300 V or less, for fire alarm and signaling systems and intended for indoor and/or outdoor installation:

a) In Canada, in accordance with CSA C22.1, Canadian Electrical Code, Part I, Safety Standard for Electrical Installations; and with CAN/ULC-S524, Standard for Installation of Fire Alarm Systems. Refer to CAN/ULC-S541, Speakers for Fire Alarm and Signaling Systems, Including Accessories, for requirements pertaining to speakers.

b) In the United States in accordance with the National Electrical Code, NFPA 70, and the National Fire Alarm and Signaling Code, NFPA 72.

1.2 This standard applies to audible signaling devices for use in ordinary (non-hazardous or non-corrosive) locations.

1.3 This standard also applies to protective covers and accessories used with audible signals.

1.4 This standard does not apply to door bells, buzzers and chimes used in household and similar applications and intended for operation on Class 2 signal circuits as defined in:

a) In Canada, CSA C22.1, Canadian Electrical Code, Part I, Safety Standard for Electrical Installations,

b) In the United States, the National Electrical Code, NFPA 70.

NOTE: In the United States, general signaling appliances are covered by the Standard for Audible Signal Appliances for General Signaling Use, UL 464A.

1.5 Audible signaling devices for use in hazardous or corrosive locations shall comply with the requirements of this Standard and the applicable requirements of:

a) In Canada, CSA C22.1, Canadian Electrical Code, Part I, Safety Standard for Electrical Installations, with respect to the location hazard;

b) In the United States, the National Electrical Code, NFPA 70.

1.6 A supplementary visual signal, incorporated as part of an audible signaling device which is intended for fire alarm application shall comply with the requirements of this Standard and the applicable requirements of:

a) In Canada, CAN/ULC-S526, Standard for Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories;

b) In the United States, the Standard for Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories, UL 1638.

2 General

2.1 Components

2.1.1 Except as indicated in 2.1.2a component of a product covered by this Standard shall comply with the requirements for that component. See Annex A for a list of Standards covering components generally used in the products covered by this Standard.

2.1.2 A component need not comply with a specific requirement that:

a) Involves a feature or characteristic not needed in the application of the component in the product covered by this Standard; or

b) Is superseded by a requirement in this Standard.

2.1.3 A component shall be used in accordance with rating(s) established by its manufacturer for the intended conditions of use.

2.2 Units of Measurement

2.2.1 Unless otherwise indicated, all voltage and current values mentioned in this Standard are root-mean-square (rms).

2.2.2 The metric unit shall be designated as the official unit for purposes of this standard. Where values of measurement are specified in both SI and English units, either unit is used. In cases of dispute, the metric unit shall be used. Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

2.2.3 Wherever the abbreviation ″AWG″ appears in these requirements, it refers to American Wire Gauge.

2.3 Control Unit Interface

2.3.1 An audible signaling device incorporating circuitry for functional interfacing with a control unit for purposes such as supervision, point addressing, multiplexing, synchronization etc., shall also comply with the applicable functional requirements of standards such as:

a) In Canada, CAN/ULC-S527, Standard for Control Units for Fire Alarm Systems;

b) In the United States, the Standard for Control Units and Accessories for Fire Alarm Systems, UL 864.

2.4 Reference Publications

2.4.1 **(REV1)** The documents shown below are referenced in the text of this Standard. Unless otherwise stated elsewhere in this Standard such reference shall be considered to indicate the edition and/or revisions of the document available at the date on which this standard was approved. All undated references shall be interpreted as referring to the latest edition of that document.

UL Standards

UL 224,
Extruded Insulating Tubing

UL 746C,
Polymeric Materials – Use in Electrical Equipment Evaluations

UL 796,
Printed Wiring Boards

UL 864,
Control Units and Accessories for Fire Alarm Systems

UL 969,
Marking and Labeling Systems

UL 1004-1,
Rotating Electrical Machines – General Requirements

UL 1004-2,
Machines – General Requirements

UL 1004-3,
Thermally Protected Motors

UL 60065,
Audio, Video, and Similar Electronic Apparatus – Safety requirements

UL 60384-14,
Fixed Capacitors for Use in Electronic Equipment – Part 14: Sectional Specification: Fixed Capacitors for Electromagnetic Interference Suppression and Connection to the Supply Mains

ULC Standards

CAN/ULC-S524,
Standard for Installation of Fire Alarm Systems

CAN/ULC-S526,
Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories

CAN/ULC-S527,
Standard for Control Units for Fire Alarm and Signaling Systems

CAN/ULC-S541,
Speakers for Fire Alarm and Signaling Systems, Including Accessories

Acoustical Society of America Standards

ANSI S1.40-2006 (R2011),
American National Standard Specifications and Verification Procedures for Sound Calibrators

ANSI/ASA S12.51-2012/ISO 3741-2010,
American National Standard Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure – Precision methods for reverberation test rooms

ANSI/ASA S1.4-2014/Part 1 / IEC 61672-1:2013,
Electroacoustics – Sound Level Meters – Part 1: Specifications

ANSI/ASA S1.4-2014/Part 2 / IEC 61672-2:2013,
Electroacoustics – Sound Level Meters – Part 2: Pattern Evaluation Tests

ANSI/ASA S1.4-2014/Part 3 / IEC 61672-3:2013,
Electroacoustics - Sound Level Meters - Part 3: Periodic Tests

ASTM Standards

ANSI/ASTM B86,
Specifications for Zinc-Alloy Die Castings

ASTM B117,
Standard Practice for Operating Salt Spray (Fog) Apparatus

ASTM E27-81,
Standard Method of Spectrochemical Analysis of Zinc-Base Alloys and High-Grade Zinc by the Solution Residue-DC Arc Technique

ASTM E28,
Standard Test Methods for Softening Point by Ring-and-Ball Apparatus

CSA Group Standards

C22.1-15,
Canadian Electrical Code, Part I, Safety Standard for Electrical Installations

C22.2 No. 0.15-01 (R2012),
Adhesive Labels

CAN/CSA-C22.2 No. 0.4-04 (R2009),
Bonding of Electrical Equipment

CAN/CSA-C22.2 No. 0.17-00 (R2009),
Evaluation of Properties of Polymeric Materials

C22.2 No. 77-95 (R2009),
Motors with Inherent Overheating Protection

CAN/CSA-C22.2 No. 198.1-06 (R2010),
Extruded Insulating Tubing