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ANSI/CAN/UL/ULC 9990:2024

STANDARD FOR SAFETY

Information and Communication Technology (ICT) Power Cables

Approved American National Standard
ANSI

ANSI/UL 9990-2024

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UL Standard for Safety for Information and Communication Technology (ICT) Power Cables, ANSI/CAN/UL/ULC 9990

Second Edition, Dated December 18, 2024

Summary of Topics

This new Second Edition of ANSI/CAN/UL/ULC 9990 Standard for Information and Communication Technology (ICT) Power Cables dated December 18, 2024 is being issued as a new joint US/Canada Standard reflecting the latest ANSI and SCC approval dates and incorporating the proposal dated September 27, 2024.

The new requirements are substantially in accordance with Proposal(s) on this subject dated September 27, 2024.

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ANSI/UL 9990-2024

DECEMBER 18, 2024

ANSI/CAN/UL/ULC 9990:2024

Standard for Information and Communication Technology (ICT) Power Cables

First Edition – July, 2023

Second Edition

December 18, 2024

This ANSI/UL Standard for Safety consists of the Second Edition.

The most recent designation of ANSI/UL 9990 as an American National Standard (ANSI) occurred on December 18, 2024. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

This Standard has been designated as a National Standard of Canada (NSC) on December 18, 2024.

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Preface

This is the Second Edition of ANSI/CAN/UL/ULC 9990, Standard for Information and Communication Technology (ICT) Power Cables.

ULSE is accredited by the American National Standards Institute (ANSI) and the Standards Council of Canada (SCC) as a Standards Development Organization (SDO). ULC Standards is accredited by the Standards Council of Canada (SCC) as a Standards Development Organization (SDO).

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

This ANSI/CAN/UL/ULC 9990 Standard is under continuous maintenance, whereby each revision is approved in compliance with the requirements of ANSI and SCC for accreditation of a Standards Development Organization. In the event that no revisions are issued for a period of four years from the date of publication, action to revise, reaffirm, or withdraw the standard shall be initiated.

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 Second Edition joint American National Standard and National Standard of Canada is based on, and now supersedes, the First Edition of UL 9990.

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.

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

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This Edition of the Standard has been formally approved by the Technical Committee (TC) on Information and Communication Technology (ICT) Cables, TC 9990.

This list represents the TC 9990 membership when the final text in this standard was balloted. Since that time, changes in the membership may have occurred.

TC 9990 Membership

Name	Representing	Interest Category	Region
A. Albrinck	Teknor Apex	Supply Chain	USA
A. Tassone	UL Solutions	Testing and Standards Organization	USA
C. Treuthardt	UL Standards & Engagement	TC Chair – Non-voting	USA

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D. Ebersole	Ebersole Engineering/Robson Forensic	Commercial / Industrial Users	USA
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This Standard is intended to be used for conformity assessment.

The intended primary application of this standard is stated in its scope. It is important to note that it remains the responsibility of the user of the standard to judge its suitability for this particular application.

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INTRODUCTION

1 Scope

1.1 This Standard covers the power handling capabilities of Information and Communication Technology (ICT) cable assemblies when used for powering or charging Audio/Video, Information, and Communication Technology Equipment applications. This does not include Power Over Ethernet cables that are permanently installed to power equipment installed on the network. The signal transmission performance of the cable assemblies is not within the scope of these requirements.

1.2 These requirements apply to ICT cable assemblies categorized below, Type designations used in this standard only serve as a guide to determine appropriate requirements, and do not represent an assigned rating.

a) Type I: These cable assemblies are intended to be used only in the output of a power source class 2 (PS2) and electrical energy source class 1 (ES1), or a limited power source, as determined in accordance with the Standard for Audio/Video, Information, and Communication Technology Equipment – Part 1: Safety Requirements, UL 62368-1. These circuits do not exceed 60 V DC, 8.0 amperes and 100 watts.

Note: These circuits are sometimes referred to as "low voltage, limited-power circuits", "low voltage, limited-energy circuits" or "NEC® Class 2 circuits".

b) Type II: These cable assemblies are intended to be used in the output of a power source that exceeds the limits for Type I and provide powering or charging for connected equipment that do not exceed 60 V DC, 8.0 amperes and power limits over 100 watts and up to and including 250 watts. These cable assemblies contain an electronic circuit to implement power delivery synchronization (handshaking) with the power source before permitting over 100 W of power.

Note: These circuits are sometimes referred to as ES1 (< 60 Vdc >) and PS3 (> 100 VA)

1.3 ICT cable assemblies may also be required to comply with industry specifications applicable to their particular configuration and use. Compliance with these specifications is not within the scope of these requirements.

2 Referenced Publications

2.1 Any undated reference to a code or standard appearing in the requirements of this Standard shall be interpreted as referring to the latest edition of that code or standard.

ASTM E230/E230M, *Standard Specification and Temperature-Electromotive Force (emf) Tables for Standardized Thermocouples*

CSA C22.2 No. 49-18, *Flexible Cords and Cables*

EIA-364-38, *Cable Pull-Out Test Procedure for Electrical Connectors*

EIA-364-41, *Cable Flexing Test Procedure for Electrical Connectors*

UL 13, *Power-Limited Circuit Cables*

UL 62, *Flexible Cords and Cables*

UL 94, *Tests for Flammability of Plastic Materials for Parts in Devices and Appliances*

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UL 444, *Communications Cables*

UL 758, *Appliance Wiring Material*

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

UL 969, *Marking and Labeling Systems*

UL 969A, *Marking and Labeling Systems – Flag Labels, Flag Tags, Wrap-Around Labels and Related Products*

UL 1694, *Tests for Flammability of Small Polymeric Component Materials*

UL 2556, *Wire and Cable Test Methods*

UL 62368-1, *Audio/Video, Information, and Communication Technology Equipment – Part 1: Safety Requirements*

3 Units of Measurement

3.1 Values stated without parentheses are the requirement. Values in parentheses are explanatory or approximate information.

4 Glossary

4.1 For the purpose of this Standard, the following definitions apply.

4.2 ADAPTER – A male and female contact device that adapts one pin or slot configuration to another.

4.3 CHEATER CABLES – Cable assemblies with standard connector configurations or connector configurations that will mate with standard connector configurations that are provided with inappropriate markers, connections, shorts, physical configurations, etc. that are designed to "trick” the connected devices into unintended modes of operation or disable or interfere with the intended system operation. An example of this would be shorting the data pins in a charging cable assembly to force a power source into a high current, quick charge mode.

4.4 MARKED CABLE ASSEMBLY – A cable assembly that uses physical characteristics of the connectors, shorted or open conductors, or active or passive circuit components within the cable to provide information about the cable's power handling characteristics to the power source, the powered device (load), or both. The “marking” is electronically detected by the devices (power source and/or load) on either or both ends of the cable assembly.

CONSTRUCTION

5 Cable Assemblies

5.1 Cables shall comply with UL 444, UL 13, or UL 758, or UL 62 / CSA C22.2 No. 49-18, rated VW-1, jacketed and determined to be suitable for the application.

5.2 For cables 20.3 cm (8 inches) in length or greater provided with an additional decorative covering over the jacket of the cable, the combination of the decorative covering and cable shall comply with the VW-1 test described in UL 2556. The outer layer of the decorative covering shall be non-conductive. Cable assemblies shall have one connector on each end. Plug/connector combinations shall be of a type

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