



**CSA C22.2 No. 62368-1:14**  
(IEC 62368-1:2014, MOD)  
National Standard of Canada  
*(reaffirmed 2019)*



**CSA C22.2 No. 62368-1:14**  
**Audio/video, information and communication technology  
equipment — Part 1: Safety requirements**  
(IEC 62368-1:2014, MOD)



Standards Council of Canada  
Conseil canadien des normes

*National Standard of Canada*  
*CSA C22.2 No. 62368-1:14*  
**Audio/video, information and  
communication technology equipment —  
Part 1: Safety requirements**  
*(IEC 62368-1:2014, MOD)*

**Note:** For brevity, this Standard will be referred to as “CAN/CSA-C22.2 No. 62368-1” throughout.

DECEMBER 1, 2014

This standard is based on IEC 62368-1, Edition 2 (2014).

*Prepared by*  
*International Electrotechnical Commission*



*Reviewed by*



CSA Group  
CAN/CSA-C22.2 No. 62368-1-14  
Second Edition  
(IEC 62368-1:2014, MOD)



Underwriters Laboratories Inc.  
UL 62368-1  
Second Edition

*Approved by*



ICS 33.160.01, 35.020



ANSI/UL 62368-1-2014

## 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 any time. 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.

---

## ISBN 978-1-77139-679-0 © 2014 CSA Group

All rights reserved. No part of this publication may be reproduced in any form whatsoever without the prior permission of the publisher.

This Standard is subject to review 5 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 [inquires@csagroup.org](mailto:inquires@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.

To purchase CSA Group Standards and related publications, visit CSA Group’s Online Store at [shop.csa.ca](http://shop.csa.ca) or call toll-free 1-800-463-6727 or 416-747-4044.

---

## Copyright © 2014 Underwriters Laboratories Inc.

UL’s Standards for Safety are copyrighted by UL. Neither printed nor electronic copy of a Standard should be altered in any way. All of UL’s Standards and all copyrights, ownerships, and rights regarding those Standards shall remain the sole and exclusive property of UL.

This ANSI/UL Standard for Safety consists of the Second Edition. The most recent designation of ANSI/UL 62368–1 as an American National Standard (ANSI) occurred on December 1, 2014. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page (front and back), or the Preface. The National Difference Page and IEC Foreword are also excluded from the ANSI approval of IEC-based standards.

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 <http://csds.ul.com>.

To purchase UL Standards, visit Comm 2000 at [http://www.comm-2000.com/help/how\\_to\\_order.aspx](http://www.comm-2000.com/help/how_to_order.aspx) or call toll-free 1-888-853-3503.

---

## CONTENTS

Preface .....	13
NATIONAL DIFFERENCES .....	15
FOREWORD .....	16
INTRODUCTION .....	17
1 Scope .....	37
1DV.5.1 Power Distribution Equipment and Sub-Assemblies .....	39
2 Normative references .....	41
3 Terms, definitions and abbreviations .....	49
3.1 Energy source abbreviations .....	49
3.2 Other abbreviations .....	50
3.3 Terms and definitions .....	51
4 General requirements .....	64
4.1 General .....	64
4.2 Energy source classifications .....	70
4.3 Protection against energy sources .....	71
4.4 Safeguards .....	82
4.5 Explosion .....	86
4.6 Fixing of conductors .....	87
4.7 Equipment for direct insertion into mains socket outlets .....	88
4.8 Products containing lithium coin / button cell batteries .....	89
4.9 Likelihood of fire or shock due to entry of conductive objects .....	92
5 Electrically-caused injury .....	93
5.1 General .....	93
5.2 Classification and limits of electrical energy sources .....	93
5.3 Protection against electrical energy sources .....	101
5.4 Insulation materials and requirements .....	104
5.5 Components as safeguards .....	148
5.6 Protective conductor .....	153
5.7 Prospective touch voltage, touch current and protective conductor current .....	162
6 Electrically-caused fire .....	171
6.1 General .....	171
6.2 Classification of power sources (PS) and potential ignition sources (PIS) .....	171
6.3 Safeguards against fire under normal operating conditions and abnormal operating conditions .....	178
6.4 Safeguards against fire under single fault conditions .....	179
6.5 Internal and external wiring .....	195
6.6 Safeguards against fire due to the connection of additional equipment .....	197
6.7DV.1 Safeguards against electrically-caused fire due to overvoltage from power line crosses .....	197
7 Injury caused by hazardous substances .....	197
7.1 General .....	197
7.2 Reduction of exposure to hazardous substances .....	197
7.3 Ozone exposure .....	198
7.4 Use of personal safeguards (PPE) .....	198
7.5 Use of instructional safeguards and instructions .....	198
7.6 Batteries and their protection circuits .....	198

8	Mechanically-caused injury	198
8.1	General	198
8.2	Mechanical energy source classifications	199
8.3	Safeguards against mechanical energy sources	202
8.4	Safeguards against parts with sharp edges and corners	202
8.5	Safeguards against moving parts	203
8.6	Stability of equipment	208
8.7	Equipment mounted to a wall or ceiling	212
8.8	Handle strength	214
8.9	Wheels or casters attachment requirements	215
8.10	Carts, stands, and similar carriers	215
8.11	Mounting means for rack mounted equipment	218
8.12	Telescoping or rod antennas	220
9	Thermal burn injury	220
9.1	General	220
9.2	Thermal energy source classifications	221
9.3	Safeguards against thermal energy sources	223
9.4	Requirements for safeguards	224
10	Radiation	224
10.1	General	224
10.2	Radiation energy source classifications	224
10.3	Safeguards against laser radiation	227
10.4	Safeguards against visible, infra-red, and ultra-violet radiation	227
10.5	Safeguards against x-radiation	229
10.6	Safeguards against acoustic energy sources	230

## Annex A (informative)

### Examples of equipment within the scope of this standard

## Annex B (normative) Normal operating condition tests, abnormal operating condition tests and single fault condition tests

B.1	General	236
B.1.1	Introduction	236
B.1.2	Test applicability	236
B.1.3	Type of test	236
B.1.4	Test samples	236
B.1.5	Compliance by inspection of relevant data	237
B.1.6	Temperature measurement conditions	237
B.2	Normal operating conditions	237
B.2.1	General	237
B.2.2	Supply frequency	238
B.2.3	Supply voltage	238
B.2.4	Normal operating voltages	238
B.2.5	Input test	239
B.2.6	Operating temperature measurement conditions	240
B.2.7	Battery charging and discharging under normal operating conditions	241
B.3	Simulated abnormal operating conditions	241
B.3.1	General	241

B.3.2	Covering of ventilation openings	242
B.3.3	DC mains polarity test	243
B.3.4	Setting of voltage selector	243
B.3.5	Maximum load at output terminals	243
B.3.6	Reverse battery polarity	243
B.3.7	Audio amplifier abnormal operating conditions	243
B.3.8	Compliance criteria during and after abnormal operating conditions	243
B.4	Simulated single fault conditions	243
B.4.1	General	243
B.4.2	Temperature controlling device	244
B.4.3	Motor tests	244
B.4.4	Functional insulation	244
B.4.5	Short-circuit and interruption of electrodes in tubes and semiconductors	245
B.4.6	Short-circuit or disconnection of passive components	245
B.4.7	Continuous operation of components	246
B.4.8	Compliance criteria during and after single fault conditions	246
B.4.9	Battery charging and discharging under single fault conditions	246

## Annex C (normative)

### UV radiation

C.1	Protection of materials in equipment from UV radiation	247
C.1.1	General	247
C.1.2	Requirements	247
C.1.3	Test method and compliance criteria	248
C.2	UV light conditioning test	248
C.2.1	Test apparatus	248
C.2.2	Mounting of test samples	248
C.2.3	Carbon-arc light-exposure test	249
C.2.4	Xenon-arc light-exposure test	249

## Annex D (normative)

### Test generators

D.1	Impulse test generators	250
D.2	Antenna interface test generator	251
D.3	Electronic pulse generator	252

## Annex E (normative)

### Test conditions for equipment containing audio amplifiers

E.1	Audio amplifier normal operating conditions	254
E.2	Audio amplifier abnormal operating conditions	255

**Annex F (normative) Equipment markings, instructions, and instructional safeguards**

F.1	General	256
F.2	Letter symbols and graphical symbols	256
F.2.1	Letter symbols	256
F.2.2	Graphical symbols	257
F.2.3	Compliance criteria	257
F.3	Equipment markings	257
F.3.1	Equipment marking locations	257
F.3.2	Equipment identification markings	258
F.3.3	Equipment rating markings	258
F.3.4	Voltage setting device	261
F.3.5	Markings on terminals and operating devices	261
F.3.6	Equipment markings related to equipment classification	262
F.3.7	Equipment IP rating marking	264
F.3.8	External power supply output marking	264
F.3.9	Durability, legibility and permanence of markings	264
F.3.10	Test for the permanence of markings	264
F.4	Instructions	265
F.5	Instructional safeguards	266

**Annex G (normative) Components**

G.1	Switches	271
G.1.1	General	271
G.1.2	Requirements	271
G.1.3	Test method and compliance criteria	272
G.2	Relays	272
G.2.1	Requirements	272
G.2.2	Overload test	273
G.2.3	Relay controlling connectors supplying power to other equipment	274
G.2.4	Test method and compliance criteria	274
G.3	Protective devices	274
G.3.1	Thermal cut-offs	274
G.3.2	Thermal links	276
G.3.3	PTC thermistors	277
G.3.4	Overcurrent protective devices	277
G.3.5	Safeguard components not mentioned in G.3.1 to G.3.4	278
G.4	Connectors	278
G.4.1	Clearance and creepage distance requirements	278
G.4.2	Mains connectors	279
G.4.3	Connectors other than mains connectors	279
G.5	Wound components	279
G.5.1	Wire insulation in wound components	279
G.5.2	Endurance test	280
G.5.3	Transformers	282
G.5.4	Motors	287
G.6	Wire insulation	292
G.6.1	General	292
G.6.2	Solvent-based enamel winding insulation	293
G.7	Mains supply cords	294
G.7.1	General	294

G.7.2	Cross sectional area	295
G.7.3	Cord anchorages and strain relief for non-detachable power supply cords	296
G.7.4	Cord entry	297
G.7.5	Non-detachable cord bend protection	298
G.7.6	Supply wiring space	299
G.7ADV.1	General	300
G.7ADV.2	Methods of connection	301
G.7ADV.3	Sizing and ratings	301
G.7ADV.4	Serviceability	302
G.7ADV.5	Length	302
G.8	Varistors	303
G.8.1	General	303
G.8.2	Safeguards against electric shock	304
G.8.3	Safeguards against fire	305
G.9	Integrated circuit (IC) current limiters	306
G.9.1	Requirements	306
G.9.2	Test program 1	307
G.9.3	Test program 2	308
G.9.4	Test program 3	308
G.9.5	Compliance criteria	309
G.10	Resistors	309
G.10.1	General	309
G.10.2	Resistor test	309
G.10.3	Resistors serving as safeguards between the mains and an external circuit consisting of a coaxial cable	310
G.11	Capacitors and RC units	310
G.11.1	General	310
G.11.2	Conditioning of capacitors and RC units	311
G.11.3	Rules for selecting capacitors	311
G.11.4	Examples of the application of capacitors	312
G.12	Optocouplers	314
G.13	Printed boards	314
G.13.1	General	314
G.13.2	Uncoated printed boards	314
G.13.3	Coated printed boards	314
G.13.4	Insulation between conductors on the same inner surface	316
G.13.5	Insulation between conductors on different surfaces	316
G.13.6	Tests on coated printed boards	316
G.14	Coatings on component terminals	320
G.14.1	Requirements	320
G.14.2	Test method and compliance criteria	320
G.15	Pressurized liquid filled components	320
G.15.1	General	320
G.15.2	Requirements	321
G.15.3	Test methods and compliance criteria	321
G.15.4	Compliance criteria	323
G.16	IC including capacitor discharge function (ICX)	323
G.16.1	Requirements	323
G.16.2	Tests	323
G.16.3	Compliance criteria	324

## Annex H (normative) Criteria for telephone ringing signals

H.1	General	325
H.2	Method A	325
H.3	Method B	329
H.3.1	Ringing signal	329
H.3.2	Tripping device and monitoring voltage	330
H.4DV.1	Other telecommunication signals	331

#### **Annex I (informative) Overvoltage categories (see IEC 60364-4-44)**

#### **Annex J (normative) Insulated winding wires for use without interleaved insulation**

J.1	General	335
J.2	Type tests	335
J.2.1	General	335
J.2.2	Electric strength	335
J.2.3	Flexibility and adherence	336
J.2.4	Heat shock	337
J.2.5	Retention of electric strength after bending	338
J.3	Testing during manufacturing	338
J.3.1	General	338
J.3.2	Routine test	338
J.3.3	Sampling test	339

#### **Annex K (normative) Safety interlocks**

K.1	General	340
K.1.1	General requirements	340
K.1.2	Test method and compliance criteria	341
K.2	Components of the safety interlock safeguard mechanism	341
K.3	Inadvertent change of operating mode	341
K.4	Interlock safeguard override	341
K.5	Fail-safe	341
K.5.1	Requirement	341
K.5.2	Test method and compliance criteria	342
K.6	Mechanically operated safety interlocks	342
K.6.1	Endurance requirement	342
K.6.2	Test method and compliance criteria	342
K.7	Interlock circuit isolation	342
K.7.1	Separation distances for contact gaps and interlock circuit elements	342
K.7.2	Overload test	343
K.7.3	Endurance test	343
K.7.4	Electric strength test	343

#### **Annex L (normative) Disconnect devices**

L.1	General requirements	344
L.2	Permanently connected equipment	344
L.3	Parts that remain energized	344
L.4	Single-phase equipment	345

L.5 Three-phase equipment .....	345
L.6 Switches as disconnect devices .....	345
L.7 Plugs as disconnect devices .....	345
L.8 Multiple power sources .....	345
L.9 Compliance criteria .....	346

#### **Annex M (normative) Equipment containing batteries and their protection circuits**

M.1 General requirements .....	347
M.2 Safety of batteries and their cells .....	347
M.2.1 Requirements .....	347
M.2.2 Compliance criteria .....	348
M.3 Protection circuits for batteries provided within the equipment .....	348
M.3.1 Requirements .....	348
M.3.2 Test method .....	349
M.3.3 Compliance criteria .....	350
M.4 Additional safeguards for equipment containing a secondary lithium battery .....	350
M.4.1 General .....	350
M.4.2 Charging safeguards .....	350
M.4.3 Fire enclosure .....	352
M.4.4 Drop test of equipment containing a secondary lithium battery .....	352
M.5 Risk of burn due to short-circuit during carrying .....	353
M.5.1 Requirements .....	353
M.5.2 Test method and compliance criteria .....	354
M.6 Prevention of short-circuits and protection from other effects of electric current .....	354
M.6.1 Short-circuits .....	354
M.6.2 Leakage currents .....	355
M.7 Risk of explosion from lead acid and NiCd batteries .....	355
M.7.1 Ventilation preventing an explosive gas concentration .....	355
M.7.2 Test method and compliance criteria .....	355
M.8 Protection against internal ignition from external spark sources of batteries with aqueous electrolyte .....	357
M.8.1 General .....	357
M.8.2 Test method .....	357
M.9 Preventing electrolyte spillage .....	361
M.9.1 Protection from electrolyte spillage .....	361
M.9.2 Tray for preventing electrolyte spillage .....	362
M.10 Instructions to prevent reasonably foreseeable misuse .....	362

#### **Annex N (normative) Electrochemical potentials (V)**

#### **Annex O (normative) Measurement of creepage distances and clearances**

#### **Annex P (normative) Safeguards against conductive objects**

P.1 General .....	376
P.2 Safeguards against entry or consequences of entry of a foreign object .....	376
P.2.1 General .....	376
P.2.2 Safeguards against entry of a foreign object .....	376

P.2.3 Safeguards against the consequences of entry of a foreign object .....	378
P.3 Safeguards against spillage of internal liquids .....	381
P.3.1 General .....	381
P.3.2 Determination of spillage consequences .....	382
P.3.3 Spillage safeguards .....	382
P.3.4 Compliance criteria .....	383
P.4 Metallized coatings and adhesives securing parts .....	383
P.4.1 General .....	383
P.4.2DV.1 Tests .....	383
P.5 For metalized coatings, clearances and creepage distances for pollution degree 3 shall be maintained instead of the tests of P.4.2 .....	385
P.5.1 Tests .....	385

#### **Annex Q (normative) Circuits intended for interconnection with building wiring**

Q.1 Limited power source .....	387
Q.1.1 Requirements .....	387
Q.1.2 Test method and compliance criteria .....	387
Q.2 Test for external circuits – paired conductor cable .....	388

#### **Annex R (normative) Limited short-circuit test**

R.1 General .....	390
R.2 Test setup .....	390
R.3 Test method .....	390
R.4 Compliance criteria .....	391

#### **Annex S (normative) Tests for resistance to heat and fire**

S.1 Flammability test for fire enclosure and fire barrier materials of equipment where the steady-state power does not exceed 4 000 W .....	392
S.2 Flammability test for fire enclosure and fire barrier integrity .....	393
S.3 Flammability tests for the bottom of a fire enclosure .....	394
S.3.1 Mounting of samples .....	394
S.3.2 Test method and compliance criteria .....	394
S.4 Flammability classification of materials .....	394
S.5 Flammability test for fire enclosure materials of equipment with a steady-state power exceeding 4 000 W .....	395

#### **Annex T (normative) Mechanical strength tests**

T.1 General .....	397
T.2 Steady force test, 10 N .....	397
T.3 Steady force test, 30 N .....	397
T.4 Steady force test, 100 N .....	397
T.5 Steady force test, 250 N .....	397
T.6 Enclosure impact test .....	397
T.7 Drop test .....	398
T.8 Stress relief test .....	399

T.9 Impact test .....	399
T.10 Glass fragmentation test .....	400
T.11 Test for telescoping or rod antennas .....	400

#### **Annex U (normative) Mechanical strength of CRTs and protection against the effects of implosion**

U.1 General .....	401
U.2 Test method and compliance criteria for non-intrinsically protected CRTs .....	402
U.3 Protective screen .....	402

#### **Annex V (normative) Determination of accessible parts**

V.1 Accessible parts of equipment .....	403
V.1.1 General .....	403
V.1.2 Test method 1 – Surfaces and openings tested with jointed test probes .....	403
V.1.3 Test method 2 – Openings tested with straight unjointed test probes .....	404
V.1.4 Test method 3 – Plugs, jacks, connectors .....	407
V.1.5 Test method 4 – Slot openings .....	407
V.1.6 Test method 5 – Terminals intended to be used by an ordinary person .....	409
V.2 Accessible part criterion .....	409

#### **Annex W (informative) Comparison of terms introduced in this standard**

W.1 General .....	410
W.2 Comparison of terms .....	410

#### **Annex DVA (normative) Canadian and U.S. regulatory-based requirements**

#### **Annex DVB (normative) Equipment used in health care facilities**

DVB.1 General .....	434
DVB.2 Terms and definitions .....	434
DVB.3 Electrically-caused injury .....	434
DVB.4 Mechanically caused injury – wheels and casters .....	437
DVB.5 Thermal burn injury .....	437
DVB.6 Operation and installation instructions .....	437
DVB.7 Flexible cord .....	438
DVB.8 Hospital grade attachment plug .....	438
DVB.9 Disconnect devices – all-poles switch .....	438

#### **Annex DVC (normative) Under kitchen cabinet equipment**

DVC.1 General .....	440
DVC.2 Terms and definitions .....	440
DVC.3 Electrically-caused injury – insulation materials and requirements .....	440
DVC.4 Safeguards against fire under normal operating conditions – operation and installation instructions .....	441

DVC.5 Normal operating conditions .....	441
<b>Annex DVD (informative) D.C. powered equipment and centralized d.c. power systems (DC mains)</b>	
DVD.1 System descriptions .....	444
<b>Annex DVE (normative) UL and CSA component requirements (mandatory)</b>	
<b>Annex DVF (normative) UL and CSA component requirements (alternative to IEC standards)</b>	
<b>Annex DVG (normative) UL and CSA component requirements (alternative)</b>	
<b>Annex DVH (normative) Permanently connected equipment – mains connections</b>	
<b>Annex DVI (normative) Safeguards against electrically-caused fire due to overvoltage from power line crosses</b>	
DVI.1 General .....	480
DVI.2 Equipment evaluation – performance .....	484
DVI.3 Test set-up .....	484
DVI.4 Test conditions .....	486
DVI.5 Compliance .....	490
<b>Annex DVJ (normative) Acoustic tests for telecommunications equipment</b>	
DVJ.1 General .....	491
DVJ.2 Definitions .....	491
DVJ.3 Acoustic pressure limiting .....	492
DVJ.4 Short-duration impulses .....	493
DVJ.5 Long-duration disturbances .....	497
<b>Annex DVK (normative) Canadian and U.S. marking and instructions</b>	
<b>Bibliography</b>	

# AUDIO/VIDEO, INFORMATION AND COMMUNICATION TECHNOLOGY EQUIPMENT – Part 1: Safety requirements

## 1 Scope

This part of IEC 62368 is applicable to the safety of electrical and electronic equipment within the field of audio, video, information and communication technology, and business and office machines with a RATED VOLTAGE not exceeding 600 V. This standard does not include requirements for performance or functional characteristics of equipment.

NOTE 1 Examples of equipment within the scope of this standard are given in Annex A.

NOTE 2 A RATED VOLTAGE of 600 V is considered to include equipment rated 400/690 V.

This part of IEC 62368 is also applicable to:

- components and subassemblies intended for incorporation in this equipment. Such components and subassemblies need not comply with every requirement of the standard, provided that the complete equipment, incorporating such components and subassemblies, does comply;
- external power supply units intended to supply other equipment within the scope of this part of IEC 62368;
- accessories intended to be used with equipment within the scope of this part of IEC 62368.

This part of IEC 62368 does not apply to power supply systems which are not an integral part of the equipment, such as motor-generator sets, BATTERY backup systems and distribution transformers.

This part of IEC 62328 specifies SAFEGUARDS FOR ORDINARY PERSONS, INSTRUCTED PERSONS, and SKILLED PERSONS. Additional requirements may apply for equipment that is clearly designed or intended for use by children or specifically attractive to children.

NOTE 3 In Australia, the work conducted by an INSTRUCTED PERSON or a SKILLED PERSON may require formal licensing from regulatory authorities.

This standard assumes an altitude of 2 000 m unless specified otherwise by the manufacturer.

This part of IEC 62368 does not apply to equipment to be used in wet areas. Additional requirements may apply.

Additional requirements for equipment intended for outdoor installation are given in IEC 60950-22.

This part of IEC 62368 does not address:

- manufacturing processes except safety testing;
- injurious effects of gases released by thermal decomposition or combustion;
- disposal processes;
- effects of transport (other than as specified in this standard);

- effects of storage of materials, components, or the equipment itself;
- the likelihood of injury from particulate radiation such as alpha particles and beta particles;
- the likelihood of thermal injury due to radiated or convected thermal energy;
- the likelihood of injury due to flammable liquids;
- the use of the equipment in oxygen-enriched or *EXPLOSIVE* atmospheres;
- exposure to chemicals other than as specified in Clause 7;
- electrostatic discharge events;
- environmental aspects;
- requirements for functional safety.

NOTE 4 For specific functional and software safety requirements of electronic safety-related systems (for example, protective electronic circuits), see IEC 61508-1.

**1DV.1 DC Modify Clause 1 by adding the following text after the third paragraph:**

**Battery backup systems that are not an integral part of stationary equipment, such as provided in separate cabinets, are subject to the appropriate standard for battery backup systems, such as UL 1973, Batteries for Use in Light Electric Rail (LER) Applications and Stationary Applications.**

NOTE See Figures 1.1 and 1.2 of UL 1973 for more information on independent electric energy storage systems (EESS) covered by UL 1973, which can consist of both low voltage (class ES or ES2) and high voltage (class ES3) subsystems, battery management, thermal management, and related features and safeguards. When interconnected with AV, IT, and CT Equipment, and typically used in conjunction with an uninterruptible power supply (UPS), such EESS typically serve as a short-term substitution of the mains supply during power outages and similar disturbances.

**1DV.2 DE Modify Clause 1 by replacing the seventh paragraph with the following:**

**Additional requirements for information and communication technology equipment intended for outdoor installation are given in CSA/UL 60950-22. Additional requirements for audio/video equipment intended for outdoor installation are given in the relevant requirements in CAN/CSA C22.2 No. 60065 or UL 60065.**

**1DV.3 DR Modify Clause 1 by adding the following text:**

**1DV.3.1 This standard also is applicable to equipment designed to be installed in accordance with the Canadian Electrical Code, Part I, CSA C22.1-12; Canadian Electrical Code, (CEC) Part II, General Requirements, CAN/CSA C22.2 No. 0-10; the National Electrical Code, NFPA 70-2014; and the National Electrical Safety Code, IEEE C2-2012.**