National Differences For

UL 60730-1

Automatic Electrical Controls for Household and Similar Use - Part 1: General Requirements

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These revisions are being issued to reflect the established effective date for UL 60730-1.

AS OF OCTOBER 19, 2018, THE THIRD EDITION OF UL 60730-1A, THE TWELFTH EDITION OF UL 873, AND THE THIRD EDITION OF UL 244A, WILL BE WITHDRAWN AND WILL BE REPLACED BY THIS STANDARD.

This document provides a single listing of the National Differences included in the UL adoption of the corresponding IEC standard.

Preface

This document provides a single listing of the technical National Differences included in the UL adoption of the corresponding IEC standard.

In its IEC-based standards, UL uses the notations indicated below to identify national difference type, and these types are additionally noted in this document. The standard may not use all types of these deviations.

D1 - These are deviations which are based on basic safety principles and requirements, elimination of which would compromise safety for U.S. consumers and users of products.

D2 - These are deviations based on safety practices. These are deviations for IEC requirements that may be acceptable, but adopting the IEC requirements would require considerable retesting or redesign on the manufacturer's part.

DC - These are deviations based on the component standards and will not be deleted until a particular component standard is harmonized with the IEC component standard.

DE - These are deviations based on editorial comments or corrections.

DR - These are deviations based on the national regulatory requirements.

Each national difference contains a description of what the national difference entails. Typically one of the following words is used to explain how the text of the national difference is to be applied to the base IEC text:

Addition / Add - An addition entails adding a complete new numbered clause, subclause, table, figure, or annex. Addition is not meant to include adding select words to the base IEC text.

Deletion / Delete - A deletion entails complete deletion of an entire numbered clause, subclause, table, figure, or annex without any replacement text.

Modification / Modify - A modification is an altering of the existing base IEC text such as the addition, replacement or deletion of certain words or the replacement of an entire clause, subclause, table, figure, or annex of the base IEC text.

National Differences

1.1.1DV.1 DE *Modification of 1.1.1 by adding the following after the first paragraph:*

In IEC terminology, ″safety″ is defined as an acceptable level of risk. This is consistent with the intention of UL requirements to reduce the risk of fire, shock or injury to persons.

1.1.1DV.2 D2 *Modification of the fourth paragraph of 1.1.1 by adding the following text:*

This standard also applies to automatic ELECTRICAL CONTROLS used in commercial and industrial applications where no other standard currently covers the product or when specifically restricted within the scope of a relevant part 2 standard.

1.2DV.1 DR *Modification of 1.2 by adding the following text:*

The maximum voltage is 600 V. The maximum current is unlimited.

1.5DV D2 *Addition of the following to 1.5:*

The following UL Standards are referenced in this Standard:

UL 20
Switches, General Use Snap

UL 44
Wires and Cables, Thermoset-Insulated

UL 50
Enclosures for Electrical Equipment, Non-Environmental Considerations

UL 50E
Enclosures for Electrical Equipment, Environmental Considerations

UL 62
Flexible Cords and Cables

UL 83
Wire and Cables, Thermoplastic-Insulated

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

UL 157
Gaskets and Seals

UL 224
Tubing, Extruded Insulated

UL 248 series
Low-Voltage Fuses

UL 310
Terminals, Electrically Quick-Connect

UL 372
Automatic Electrical Controls for Household and Similar Use – Part 2: Particular Requirements for Burner Ignition Systems and Components

UL 429
Valves, Electrically-Operated

UL 467
Grounding and Bonding Equipment

UL 486 series
Wire Connectors

UL 498
Attachment Plugs and Receptacles

UL 508
Industrial Control Equipment

UL 510
Tape, Polyethylene, and Rubber Insulating Tape

UL 514A
Metallic Outlet Boxes

UL 514B
Fittings, Conduit, Tubing and Cable

UL 514C
Nonmetallic Outlet Boxes, Flush-Device Boxes, and Covers

UL 635
Insulating Bushings

UL 746A
Polymeric Materials – Short Term Property Evaluations

UL 746B
Polymeric Materials – Long Term Property Evaluations

UL 746C
Polymeric Materials – Use in Electrical Equipment Evaluations

UL 746D
Polymeric Materials – Fabricated Parts

UL 796
Printed-Wiring Boards

UL 810
Capacitors

UL 817
Cord Sets and Power-Supply Cords

UL 863
Time-Indicating and -Recording Appliance

UL 917
Switches, Clock Operated

UL 969
Marking and Labeling Systems

UL 1004-1
Rotating Electrical Machines – General Requirements

UL 1054
Switches, Special Use

UL 1059
Terminal Blocks

UL 1077
Protectors, Supplementary, for Use in Electrical Equipment

UL 1310
Class 2 Power Units

UL 1414
Capacitors, and Suppressors for Radio- and Television-Type Appliances

UL 1434
Thermistor-type Devices

UL 1441
Sleeving, Coated Electrical

UL 1446
Systems of Insulating Materials – General

UL 1998
Software in Programmable Components

UL 2111
Overheating Protection for Motors

UL 4248
Fuseholders series

UL 5085-1
Low Voltage Transformers – Part 1: General Requirements

UL 5085-2
Low Voltage Transformers – Part 2: General Purpose Transformers

UL 5085-3
Low Voltage Transformers – Part 3: Class 2 and Class 3 Transformers

UL 60691
Thermal-Links – Requirements and Application Guide

UL 60950
Information Technology Equipment Safety – Part 1: General Requirements

UL 61058-1
Switches for Appliances – Part 1: General Requirements

2.1.5DV D1 *Modification of Note 1 of 2.1.5 by adding the following:*

Replace IEC 61558-2-6 with UL 5085-1 and UL 5085-3. Transformers used in Switch-mode power supplies are evaluated to the applicable requirements of this standard.

2.1.6DV DR *Addition of the following text:*

A Class 2 transformer which is considered a safety isolating transformer is defined as a step-down transformer of the low-voltage secondary type (No–load voltage 30 volts or 42.4 V_{pk} or 60 Vdc or less) in accordance with Article 725 of the National Electrical Code, NFPA 70.

2.1.21DV DR *Addition: Add the following paragraph to 2.1.21:*

A PELV circuit supplied from a transformer where the supply system is less than 150 V to ground may be earthed for functional reasons, and are used in applications where SELV is not required. A PELV circuit that is supplied from a transformer where the supply system exceeds 150 V to ground, the PELV circuit shall be grounded.

2.4.5DV D2 *Modification of 2.4.5 by adding the following text after the word "MICRO-DISCONNECTION":*

"that is mechanically secured (see 11.4.16DV)."

2.6.2DV DE *Modification of 2.6.2 by replacing the words "AUTOMATIC CONTROL" with "AUTOMATIC ACTION."*

2.7.3DV DR *Modification of 2.7.3 by adding the following text after the notes:*

CLASS 0I is not applicable.

2.7.8DV D2 *Modification of 2.7.8:*

Replace "Figure 2" with "Figure DVA.3.2.2."

2.7.15DV DR *Modification: Replace the second from last sentence of 2.7.15 with the following:*

Requirements for EQUIPOTENTIAL BONDING can be found in the National Electrical Code (NEC), NFPA 70 for the installation of buildings.

3DV DR *Modification of 3 by adding the following after "the appropriate part 2":*

In addition, controls shall be constructed so as to be installable in accordance with the National Electrical Code, NFPA 70.

4.2.1DV D2 *Modification of 4.2.1:*

Replace "28" with "27 (plus annexes)".

5.1DV DR *Modification of 5.1 by adding the following text:*

The maximum RATED VOLTAGE is 600 V in the USA.

5.2DV DR *Modification of 5.2 by adding the following text:*

The maximum current is unlimited in the USA.

6.2.3DV DE *Modification of 6.2.3 by adding the following text to the end of the note:*

"(carry only), make only or break only."

6.2.5DV D2 *Modification of 6.2.5 by adding the following text:*

An INDEPENDENTLY mounted, in-line, or free standing control shall be rated in accordance with Annex DVB.

6.2.6DV D2 *Modification of 6.2.6 by adding the following text:*

An INDEPENDENTLY mounted, in-line, or free standing control shall be rated in accordance with Annex DVB.

6.4.3.13DV D1 *Addition: Add the following to 6.4.3.13:*

An action which is prevented from functioning automatically by a positive mechanical means (Type 1.AY or Type 2.AY)

6.5DV D2 *Modification of 6.5 by adding the following text:*

According to degrees of protection as indicated in the ENVIRONMENTAL protection enclosure requirements of UL 50 and UL 50E. Additional optional degrees of protection are permitted as shown in 6.5.1 and 6.5.2 or, for integrated or INCORPORATED CONTROLS, as otherwise declared.

6.13DV D2 *Replace 6.13 with the following:*

6.13DV.1 According to value of comparative tracking index (CTI) for the insulation material used

6.13DV.1.1 – material of material group IIIb with a CTI of 100 through 174 (CTI index 4);

6.13DV.1.2 – material of material group IIIa with a CTI of 175 through 249 (CTI index 3) or CTI of 250 through 399 (CTI index 2);

6.13DV.1.3 – material of material group II with a CTI of 400 through 599 (CTI index 1);

6.13DV.1.4 – material of material group I with a CTI of 600 or greater (CTI index 0).

7.2.9DV.1 D2 *Modification of 7.2.9 by adding the following:*

Alternating current (single phase)..... ∿ ″or a.c.″

7.2.9DV.2 D2 *Modification of 7.2.9 by adding the following:*

Direct current..... ⎓ ″or d.c.″

7.2.9DV.3 D2 *Modification of 7.2.9 by adding the following:*

Symbols for alternating current (single phase), alternating current (three phase), alternating current (three phase with neutral) and ambient temperature limits of SWITCH HEAD are not used in the USA.

7.2.9DV.4 D2 *Modification of 7.2.9 by adding the following:*

Letter type abbreviations (FLA for full load amperes, HP for horsepower) which clearly convey the assigned rating may be used.

7.2.9DV.5 D2 *Modification of 7.2.9 by adding the following:*

For independently-mounted, free standing and in-line controls, information regarding the connection of specific loads shall be on a wiring diagram or label attached to the control.

Table 1DV D2 *Modification of Table 1 with the following eleven national differences:*

DV.1 Insert row 4A, with the first column being “4A”, the second column being “Class 2 power source or circuit”, the third column being “DVC.2”, and the fourth column being “C”.

DV.2 Modify the third column of row 17 by adding, “DVC.1.21”.

DV.3 Modify row 89 by replacing "CISPR 11" with "FCC Part 15 and/or 18".

DV.4 Modify note (4) by replacing "α_1 = maximum rising rate (for TYPE 2 ACTIONS only)" with "α_2 = maximum rising rate (for TYPE 2 ACTIONS only)" and by replacing "β_1 = maximum falling rate (for TYPE 2 ACTIONS only)" with "β_2 = maximum falling rate (for TYPE 2 ACTIONS only)".

DV.5 Delete note (5).

DV.6 Replace note (6) with the following, "This note does not apply in the USA. Attachment or replacement of NON-DETACHABLE CORDS is not considered a USER function."

DV.7 Replace note (7) with the following, "Motor load and PILOT DUTY load ratings are established as indicated in annex DVB and DVC respectively, and marked accordingly."

DV.8 Add the following four paragraphs to note (8):

Control enclosures shall be marked in accordance with the environmental enclosure requirements of UL 50E.

A control enclosure which has been evaluated against the ingress of water only by the Rain Test shall be marked RAINTIGHT if so constructed that exposure to beating rain will not result in the entrance of water; RAINPROOF if so constructed, protected, or treated as to prevent beating rain from interfering with successful OPERATION of the control.

Control enclosures are not required to be marked to indicate the degree of protection against the entrance of solid objects.

The IP system of marking may be optionally placed on an enclosure.

DV.9 Add the following paragraph to note (9):

A switch having one or more push-in (SCREWLESS) TERMINALS shall be marked:

a) With instructions for connecting acceptably sized wire where readily visible during installation,

b) With instructions for disconnecting a wire from the terminal where readily visible during wiring and rewiring,

c) To specify use with ″solid wire only″ unless the terminal is intended for both solid and stranded wire, and

d) With instruction to strip the insulation from conductors a specific length, where readily visible during installation.

DV.10 Delete notes (10) – (21).