UL 498A

STANDARD FOR SAFETY

Current Taps and Adapters

UL Standard for Safety for Current Taps and Adapters, UL 498A

Second Edition, Dated January 23, 2008

SUMMARY OF TOPICS

This revision of ANSI/UL 498A dated October 29, 2021 incorporates a change to Clothes Dryers and Ranges Power Adapter Markings; 8.6.1

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The revised requirements are substantially in accordance with Proposal(s) on this subject dated August 13, 2021 and October 1, 2021.

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UL 498A

Current Taps and Adapters

First Edition – December, 1999

Second Edition

January 23, 2008

This ANSI/UL Standard for Safety consists of the Second Edition including revisions through October 29, 2021.

The most recent designation of ANSI/UL 498A as an American National Standard (ANSI) occurred on October 27, 2021. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, and Title Page.

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 https://csds.ul.com.

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APPENDIX A

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1 Scope

1.1 These requirements cover current taps and adapters for use in accordance with the National Electrical Code, ANSI/NFPA-70.

1.2 These requirements do not cover current taps or adapters rated at more than 200 A or for more than 600 V. See 6.1.

1.3 These requirements do not directly apply to current taps wired to flexible cord or lampholder adapters but supplement the applicable standards. Lampholder adapters are covered in the Standard for Lampholders, UL 496. Current taps wired to flexible cord are covered in the Standard for Attachment Plugs and Receptacles, UL 498.

1.4 These requirements do not cover cord-connected, relocatable power taps intended only for indoor use as a temporary extension of a grounding, alternating-current branch circuit for general use, and which are covered by the Standard for Relocatable Power Taps, UL 1363.

1.5 These requirements do not cover the current or voltage conversion circuitry capable of being used in travel adapters.

1.6 As used in this Standard, the term device is intended to refer to both current taps and adapters unless specifically stated otherwise.

2 References

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.

2.2 The referenced standards include the following:

UL Standards

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

UL 248-14
Low-Voltage Fuses – Part 14: Supplemental Fuses

UL 489
Molded-Case Circuit Breakers, Molded-Case Switches, and Circuit-Breaker Enclosures

UL 497A
Secondary Protectors for Communications Circuits

UL 4248-1
Fuseholders – Part 1: General Requirements

UL 4248-4
Fuseholders – Part 4: Class CC

UL 4248-5
Fuseholders – Part 5: Class G

UL 4248-6
Fuseholders – Part 6: Class H

UL 4248-8
Fuseholders – Part 8: Class J

UL 4248-9
Fuseholders – Part 9: Class K

UL 4248-11
Fuseholders – Part 11: Type C (Edison Base) and Type S Plug Fuse

UL 4248-12
Fuseholders – Part 12: Class R

UL 4248-15
Fuseholders – Part 15: Class T

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 1077
Supplementary Protectors for Use in Electrical Equipment

UL 1283
Electromagnetic Interference Filters

UL 1449
Surge Protective Devices

UL 1659
Attachment Plug Blades for Use in Cord Sets and Power-Supply Cords

UL 1681
Wiring Device Configurations

ANSI Standards

ANSI/NEMA WD6
Wiring Devices – Dimensional Specifications

ANSI/NFPA 70
National Electrical Code

ASTM Standards

ASTM E 28
Standard Test Methods for Softening Point of Resins Derived from Naval Stores by Ring-and-Ball Apparatus

ASTM D 570
Standard Test Method for Water Absorption of Plastics

2.3 The NEMA configurations of various attachment plug and receptacle combinations referenced in this Standard are in accordance with Wiring Devices – Dimensional Specifications, ANSI/NEMA WD6. The Figures referenced as Section C3 contain non-NEMA configurations and are found in the Standard for Wiring Device Configurations, UL 1681.

3 Glossary

3.1 For the purposes of this Standard, the following definitions apply.

3.2 ADAPTER – A male and female contact device that adapts one blade or slot configuration to another (including a grounding adapter for a nongrounding receptacle).

3.3 ADAPTER, TRAVEL – A device that adapts the attachment plug of a portable appliance to permit its use on an electrical system that employs a male blade or pin configuration other than those found in Wiring Devices – Dimensional Specifications, ANSI/NEMA WD6 or the requirements for wiring device configurations, UL 1681. This includes adapters employing 2-pole, 2-wire and 2-pole, 3-wire blade or slot configurations rated 15 A, 125 V (1-15, 5-15) and blade or slot configurations other than found in ANSI/NEMA WD6 or UL 1681. See also 1.5.

3.3.1 CHILD-APPEALING OR TOY-LIKE FEATURES– Features that provide visual appeal and attraction to children fourteen years or less in age. Features include but are not limited to the following:

a) Products formed in the shape of a person, character or animal, and also having one of the features in Items (b) or (c);

b) Products with readily identifiable images or shapes of cartoon characters, similar characters, or faces;

c) Bright colors, sparkling blinking or flashing bright lights intended for amusement or decorative purposes and unrelated to operational or cautionary indicators or to cautionary identification; or

d) Products formed in the shape of a toy, sports equipment, or scale model.

3.4 CONFIGURATION, LOCKING – A device having a configuration that requires a motion other than a straight push or pull to connect or separate it when used with its mating part.

3.5 CONFIGURATION, MULTI- – An outlet device configuration, commonly used in travel adapters, that is designed to mate with more than one attachment plug configuration.

3.6 CURRENT TAP – A male and female contact device that, when connected to an outlet receptacle, provides multiple outlet configurations.

3.6.1 CURRENT TAP WITH SHELF – A form of current tap that includes either a shelf or ledge that is intended to support a product (such as a cell phone or tablet) during charging.

3.7 ELECTRICAL (FUNCTIONAL) INSULATION – The insulation necessary for the proper functioning of the product and for basic protection against electrical shock. This includes all parts relied upon to support live parts, all internal barriers necessary to maintain spacings, and the outlet face portion of all female devices.

3.8 ENCLOSURE, ELECTRICAL – That part of the device that renders inaccessible all or any parts of the device that are otherwise capable of presenting a risk of electric shock, retards propagation of flame initiated by electrical disturbances occurring within, or both.

3.9 GROUNDING DEVICE – A device having a 5-15, 5-20, 5-30, 5-50, 6-15, 6-20, 6-30, 6-50, 7-15, 7-20, 7-30, 7-50, 14-15, 14-20, 14-30, 14-50, 14-60, 15-15, 15-20, 15-30, 15-50, 15-60, L5-15, L5-20, L5-30, L6-15, L6-20, L6-30, L7-15, L7-20, L7-30, L8-20, L8-30, L9-20, L9-30, L14-20, L14-30, L15-20, L15-30, L16-20, L16-30, L17-30, L21-20, L21-30, L22-20, L22-30, L23-20, L23-30, TT-R, or ML-2R configuration, the configuration illustrated in Figure C3.8, or a nonstandard configuration that employs one blade, pin, or contact exclusively for grounding.

3.10 GROUNDING PATH – An electrically continuous path between the grounding pin, blade, or tab, and the grounding contact.

3.11 POLARIZED DEVICE – A device constructed for connection to a mating device only in the position that connects related poles of an electrical circuit.

4 Components

4.1 Except as indicated in 4.2, a component of a product covered by this standard shall comply with the requirements for that component. See Appendix A for a list of standards covering components used in the products covered by this standard.

4.2 A component is not required to comply with a specific requirement that:

a) Involves a feature or characteristic not required in the application of the component in the product covered by this standard, or

b) Is superseded by a requirement in this standard.

4.3 A component shall be used in accordance with its rating established for the intended conditions of use.

4.4 Specific components are incomplete in construction features or restricted in performance capabilities. Such components are intended for use only under limited conditions, such as certain temperatures not exceeding specified limits, and shall be used only under those specific conditions.

5 Units of Measurement

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

6 Ratings

6.1 The ratings mentioned throughout this Standard, including those mentioned in Table 6.1, represent maximum ampacity and maximum operating potential in volts. A device is considered to be for use on either alternating or direct current unless the rating includes the letters “AC” to restrict the use to alternating current.

6.2 A device shall be rated in amperes and volts. Where the blade configuration of the device is one of the standard configurations in accordance with Wiring Devices – Dimensional Specifications, ANSI/NEMA WD6, or with the Standard for Wiring Device Configurations, UL 1681, the device shall be given only the rating shown in the configuration. Otherwise, the device shall be given one or more of the ratings in Table 6.1. See 6.1 and 6.3.

Exception No. 1: Devices where the male configuration amperage rating is greater than the female configuration amperage rating or devices having a lower current rating than that shown in the configuration meet the intent of the requirement when provided with fuse protection integral to the adapter. See Exception No. 3 of 15.4.4.

Exception No. 2: Devices rated AC Only meet the intent of the requirement when marked in accordance with 7.3.1.

Exception No. 3: Devices where the male configuration amperage rating is less than the female configuration amperage rating than that shown in the configuration, meet the intent of the requirement if marked in accordance with 7.4.2. See Exception No. 4 of 15.4.4.

Table 6.1
Ratings of general-use devices

Ratings
10 A, 250 V and 15A, 125 V
15 A, 125 V
15 A, 250 V
15 A, 277 V AC
20 A, 125 V
20 A, 250 V
20 A, 277 V AC
30 A, 250 V
50 A, 250 V
60 A, 250 V
75 A, 250 V
75 A, 480 V AC
75 A, 600 V AC
75 A, 600 V
100 A, 250 V
100 A, 480 V AC
100 A, 600 V AC
100 A, 600 V
200 A, 250 V
200 A, 480 V AC
200 A, 600 V AC
200 A, 600 V

6.3 When a device includes a switch that controls an outlet, the overall rating of the device shall not be higher that the rating of the switch.

6.4 A device shall be rated for disconnecting use only, not for current rupturing, when the potential rating is higher than 250 V DC. A device rated for disconnecting use only, not for current rupturing, meets the intent of the requirement when the current rating is greater than 60 A AC, DC, or AC-DC. See 7.5.1.

6.5 A travel adapter shall be rated with the ratings associated with both the male and female configurations provided on the device.

6.6 A device with a nonstandard grounding configuration shall have a single ampere and single voltage rating.

6.7 Current taps intended for outdoor use shall be rated 20 amps, 250 V maximum. Outdoor current taps additionally marked with an Enclosure Type rating(s) as specified in the Standard for Enclosures for Electrical Equipment, Environmental Considerations, UL 50E, shall also comply with the requirements of 7.11.2, 8.5.2, and 45.2.

7 Markings

7.1 Company name, catalog designation, electrical rating

7.1.1 A device shall be legibly and permanently marked with:

a) The company's name, trade name, or trademark or other descriptive marking by which the organization responsible for the device is able to be identified.

b) The electrical rating. See also 7.3.1.

c) The catalog number or an equivalent designation, where practicable.

Exception: The catalog number is not prohibited from appearing on the unit container when the product is too small, or where the legibility is difficult to attain, or where several catalog numbers use common parts.

d) The markings specified in 7.2 – 7.11 as applicable.

7.1.2 A current tap employing either a mechanical or an electrical-switching means to prevent single-pole insertion, as specified in Section 35A, shall not be marked with, or identified as, "TR" or "Tamper Resistant" unless the current tap additionally complies with the Tamper-Resistant Receptacle requirements, as specified in the Standard for Attachment Plugs and Receptacles, UL 498.

7.2 Multiple factories

7.2.1 When a manufacturer produces or assembles devices at more than one factory, each finished device shall have a distinctive marking on the device, not prohibited from being in code, by which the device is able to be identified as the product of a particular factory.

7.3 AC only devices

7.3.1 A device that is intended for use on alternating current circuits only shall be identified as such by one of the following means as a part of the electrical rating:

a) The letters “AC”;

b) The words “AC Only”;

c) A frequency marking (for example, “60 Hertz”);