UL 291

STANDARD FOR SAFETY

Automated Teller Systems

UL Standard for Safety for Automated Teller Systems, UL 291

Sixth Edition, Dated February 15, 2012

Summary of Topics

This revision to ANSI/UL 291 dated May 7, 2021 is being issued to update the title page to reflect the most recent designation as a Reaffirmed American National Standard (ANS). No technical changes have been made.

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 requirements are substantially in accordance with Proposal(s) on this subject dated February 19, 2021.

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UL 291

Standard for Automated Teller Systems

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Second Edition – November, 1977
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Sixth Edition

February 15, 2012

This ANSI/UL Standard for Safety consists of the Sixth Edition including revisions through May 7, 2021.

The most recent designation of ANSI/UL 291 as a Reaffirmed American National Standard (ANS) occurred on May 7, 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.

No Text on This Page

CONTENTS

INTRODUCTION

CONSTRUCTION

PERFORMANCE

OVERALL PRODUCT

RESISTANCE TO EXPERT ATTACK

No Text on This Page

INTRODUCTION

1 Scope

1.1 These requirements cover the construction and security of equipment intended to automatically dispense currency when operated as intended by an authorized customer, and to provide a limited degree of protection against unauthorized removal of currency.

1.2 If the product also receives deposits, the same degree of protection shall also be provided for the deposits.

1.3 Records shall be made in order that the authorized customer may be debited for the currency dispensed. A limited degree of protection against unauthorized manipulation or removal of the records that will prevent proper debit shall be provided.

1.4 A teller's cash dispenser is not required to make records.

1.5 These requirements cover products intended for permanent connection to 600-volts or lower-potential branch circuits, and products intended for cord connection to 300-volt or lower-potential branch circuits. The branch circuits and the means of supplying the units from them are intended to comply with the National Electrical Code, ANSI/NFPA 70.

2 General

2.1 Components

2.1.1 Except as indicated in 2.1.2, 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.

2.1.2 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.

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

2.1.4 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.

2.2 Units of measurement

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

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

2.3 Undated references

2.3.1 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.

2.4 Terminology

2.4.1 The term "product" as used in this standard refers to any equipment covered by this standard.

3 Glossary

3.1 For the purpose of this standard, the following definitions apply.

3.2 AUTHORIZED CUSTOMER – A person authorized to conduct transactions at an automated teller system.

3.3 AUTOMATED TELLER MACHINE (ATM) – An unattended machine that will dispense currency when operated as intended by an authorized customer and which will provide a limited degree of protection against unauthorized removal of currency. The product may also receive deposits.

3.4 BUSINESS HOUR SERVICE – A product that is available during business hours only, is under observation by responsible persons, and is emptied of all valuables at the close of business.

3.5 CIRCUITS, ELECTRICAL –

a) HIGH-VOLTAGE – A circuit involving a potential of not more than 600 volts and having circuit characteristics in excess of those of a low-voltage, power-limited circuit;

b) LOW-VOLTAGE (POWER-LIMITED) – A circuit involving a potential of not more than 30 volts alternating current (AC) rms, 42.4 volts direct current (DC) or AC peak, and providing not more than 100 volt-amperes (VA) rated output. The 100 VA limit shall be provided by the design of the transformer, a fixed impedance, a non-interchangeable fuse, a nonadjustable manual reset circuit protective device, or a reliable regulating network;

c) LINE-VOLTAGE – The voltage of any field-connected source of supply other than batteries, nominally 50 – 60 hertz (Hz); 115, 208, or 230 volts.

3.6 CUSTOMER ACCESS PANEL – That portion of an automated teller system that is made available to an authorized customer for the performance of transactions.

3.7 ENCLOSURE – The word enclosure refers only to parts that enclose electrical components, including uninsulated live parts involving a shock or energy hazard. It may be an integral part of a component, a separate item, part of the ultimate enclosure, or the ultimate enclosure (outer cabinet).

3.8 ENERGY, RISK OF RELEASE OF – A risk of fire or electric shock due to release of energy is considered to exist at any exposed live part of a piece of equipment if, between the exposed live part and an adjacent exposed live or dead metal part of different polarity, there exists a potential of 2 volts or more and either:

a) An available continuous power level of 240 VA (or more) or

b) A reactive energy level of 20 joules (or more).

3.9 FISHING – Introducing into the product any form of lines, wires, or similar items to which one or more hooks or other devices may be attached, that may be manipulated so as to grasp the currency or a deposit and then withdraw it.

3.10 FORCING – The use of pry bars, screwdrivers, wrenches, or similar tools, to enlarge an opening, or to create an opening by breaking out or distorting a part, to gain access to the currency, deposits or records.

3.11 FREESTANDING INSTALLATION – The installation of an automated teller machine that is not through a building wall, a counter structure, or within a kiosk or similar structure that restricts the physical removal of the unit by requiring the damage or destruction of the structure. The freestanding automated teller machine may be recessed into a wall, but is open on one or more sides.

3.12 LIVE PARTS – Denotes metal or other conductive parts that, in normal use, have a potential difference with respect to ground or any other conductive part.

3.13 MAXIMUM NORMAL LOAD – In testing a product, maximum normal load is considered to be the load that approximates as closely as possible the most severe conditions of normal use. It is not a deliberate overload except as the conditions of actual use can be more severe than the maximum load conditions that are recommended by the manufacturer of the product.

3.14 OPERATOR PERSONNEL – Persons authorized to perform the functions defined in 3.15.

3.15 OPERATOR SERVICING – Any form of servicing that might be performed by personnel other than those who are trained to maintain the particular product. Changing ribbons is considered to be a serviceman's function rather than operator servicing if the act involves extensive disassembly of the machine. Some examples of operator servicing are as follows:

a) The attachment of accessories by means of attachment-plug caps and receptacles or by means of other separable connectors;

b) The changing of tapes or ribbons that do not involve complicated operations;

c) The replacement of recording tapes, discs, program boards, punched cards, or paper forms;

d) Resetting of circuit breakers, replacement of fuses, replacement of lamps that are accessible without the use of tools; and replacement of lamps likely to require frequent replacement, such as lamps of the projector type, whether or not the operation requires the use of tools;

e) The making of routine operating adjustments necessary to adapt the product for its different intended functions;

f) Routine cleaning, or removal of jams of data-handling media, currency, deposits and records; and

g) The loading and removal of currency, removal of deposits, or removal of items retained by the product.

3.16 PRODUCT – A product is a freestanding portion of a system to which an identification number is applied. It is supported by a frame or frames and is self-enclosed or designed to be attached to another device.

a) FIXED – A fixed product is one that is fastened or otherwise secured to the building at a specific location;

b) STATIONARY – A stationary product is one that is not easily moved from one place to another in its intended use;

c) PORTABLE – A portable product is one that actually is moved or can easily be moved from one place to another in its intended use.

3.17 REMOTE AND AUTOMATIC CONTROL – A unit of a product is considered to be remotely controlled if it is out of sight of and removed from the user. A unit of a product is considered to be automatically controlled if:

a) Energization of such as a motor, solenoid, or magnet will occur without manual intervention or

b) During any single predetermined cycle of operation, automatic changing of the mechanical load can reduce the speed of a motor sufficiently to reestablish starting-winding connections to the branch circuit.

3.18 SECURITY CONTAINER – An enclosure used to provide physical security for the currency used for dispensing, deposits received, and components that can be operated by unauthorized persons to obtain currency without debiting to proper accounts. The security container is rated as follows:

a) Business Hour Service,

b) 24-Hour Service – Level 1, and

c) 24-Hour Service – Level 2.

3.19 SHOCK, RISK OF ELECTRIC – A risk of electric shock is considered to exist at any exposed live part of a product or system if the available open-circuit potential is higher than 42.4 volts peak and the available current through a 1500-ohm resistance is more than 5 milliamperes.

3.20 TELLER'S CASH DISPENSER – A product that will dispense currency when properly operated by an authorized teller or other employee of the financial institution using the product. The currency may be dispensed directly to a customer or to the teller.

3.21 TRAPPING (CURRENCY DISPENSER) – The use of a device or materials which may be introduced into the product in such a manner as to avoid detection, by an authorized user, in order to prevent the dispensed currency from reaching the customer. The dispensed currency can then be withdrawn after the customer has left.

3.22 TRAPPING (DEPOSITS) – The use of a device or materials which may be introduced into the product in such a manner as to avoid detection, by an authorized user, in order to prevent the deposit from reaching its security container. The deposit can then be withdrawn after the customer has left.

3.23 TWENTY-FOUR HOUR SERVICE – A product that is available for use at any time during both business and non-business hours.

4 Installation and Operating Instructions

4.1 A copy or draft of the installation and operating instructions intended to accompany each product or component, or equivalent information, is to be used as a guide in the examination and test of the product or component.

4.2 The instructions shall include such directions and information as deemed by the manufacturer to be necessary for the proper and safe installation, maintenance, and operation of the product.