

## STANDARD INFORMATION

**Standard Number:** UL 294

**Standard Name:** Access Control System Units

**Standard Edition and Issue Date:** 7<sup>th</sup> Edition Dated January 31, 2018

**Date of Revision:** January 31, 2018

**Date of Previous Revision of Standard:** 6<sup>th</sup> Edition Revised February 2, 2015

## EFFECTIVE DATE OF NEW/REVISED REQUIREMENTS

**Effective Date:** **June 3, 2020**

## IMPACT, OVERVIEW, AND ACTION REQUIRED

**Impact Statement:** A review of all Listing Reports is necessary to determine which products comply with new/revised requirements and which products will require re-evaluation. **NOTE:** Effective immediately, this revised standard will be exclusively used for evaluation of new products unless the Applicant requests in writing that current requirements be used along with their understanding that their listings will be withdrawn on Effective Date noted above, unless the product is found to comply with new/revised requirements.

**As well as the changes to UL 294, products certified to UL 294 that are also under the scope of UL 294B need to be evaluated to UL 294B prior to the effective date. The table below describes the scope of UL 294B for assistance in determining applicable products.**

### Overview of Changes:

- New Requirements for Controlled and Delayed Egress Equipment and Systems Operation
- New requirements for installation instructions
- New requirements for Power Over Ethernet
- Revised requirements for standby power
- Additional requirements for Jarring Test

Specific details of new/revised requirements are found in table below.

**If the applicable requirements noted in the table are not described in your report(s), these requirements will need to be confirmed as met and added to your report(s) such as markings, instructions, test results, etc. (as required).**

### Client Action:

**Information** – To assist our Engineer with review of your Listing Reports, please submit technical information in response to the new/revised paragraphs noted in the attached or explain why these new/revised requirements do not apply to your product (s).

***Current Listings Not Active? – Please immediately identify any current Listing Reports or products that are no longer active and should be removed from our records. We will do this at no charge as long as Intertek is notified in writing prior to the review of your reports.***



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CLAUSE	VERDICT	COMMENT
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Additions to existing requirements are underlined and deletions are shown ~~lined-out~~ below.

**The following clauses contain UL 294B scope for assistance in determining applicable products**

1	Info	<b>Scope</b>
1.1	Info	This standard provides requirements for the evaluation of Power over Ethernet (PoE) power sources for access control systems and equipment. The power sources may be provided integral with the access control equipment or as a separate device supplying power. The equipment is intended to comply with Article 725.121, Power Sources for Class 2 and Class 3 Circuits, of the National Electrical Code, NFPA 70. Equipment covered by this standard provides a nominal source voltage of 48 or 53 V DC.
1.2	Info	This standard applies to all connected equipment and interconnections necessary to ensure normal operation of the PoE powered control system.
1.3	Info	PoE sources covered by this standard are not intended to be located in an outdoor environment.
1.4	Info	The PoE source shall meet the applicable requirements of the Standard for Access Control System Units, UL 294. See 2.2.4 and 2.2.5.  Exception: Outdoor Use Equipment; Sections 70 – 81 of UL 294 inclusive are not applicable.

**The following changes reflect the January 31, 2018 revision of UL 294**

	Info	<b>PERFORMANCE – ALL UNITS</b>
34	Info	<b>General</b>
34.4	Info	<b>Test samples and miscellaneous data</b>

**Test interfaces**

Table 34.1

Interface description
SIA AC-01-1996.10 – Access Control Standard Protocol for the 26-bit Wiegand Reader Interface
<u>SIA Open Supervised Device Protocol (OSDP), v2.1.5 or later</u>

34.6	Info	<b>Essential computer equipment</b>
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CLAUSE	VERDICT	COMMENT
		Essential computer equipment meeting all the conditions specified in 34.6.2 (a) – (j) need not be subjected to Sections 37 – 39 and 42 – 63.
34.6.2		<p>i) <u>The installation instructions shall specify that in addition to the main power supply and secondary power supply that are required to be provided at the central supervisory station, the system shall be provided with an uninterruptable power supply (UPS) with sufficient capacity to operate the computer equipment for a minimum of 15 minutes. If more than 15 minutes is required for the secondary power supply to supply the UPS input power, the UPS shall be capable of providing input power for at least that amount of time.</u></p> <p>j) <u>The installation instructions shall specify that the UPS shall comply with the Standard for Uninterruptable Power Systems, UL 1778, or the Standard for Power Supplies for Fire-Protective Signaling Systems, UL 1481.</u></p>
		<b><i>New section added;</i></b>
		<b>Power over communications cable equipment</b>
34.7		This section provides requirements for the evaluation of power over communications cable devices for access control systems and equipment. Power sources may be provided integral with the access control equipment or as a separate device supplying power (see standard for details).
41	Info	<b>Standby Power</b>
41.5		Level III Test – Shall continue to operate as intended at full load for a minimum of 2 hours while the product operates a minimum of one cycle of its intended function every <del>two minutes</del> <u>minute</u> .
41.6		Level IV Test – Shall continue to operate as intended at full load for a minimum of 4 hours while the product operates a minimum of one cycle of its intended function every <del>two minutes</del> <u>minute</u> .
50	Info	<b>Jarring Test</b>
		<b><i>New clause added;</i></b>
50.2		Product utilizing freestanding, or other non-wall- or ceiling-type mounting shall comply with the requirements in 50.1 when subjected to the jarring described in 50.4. Desktop products shall comply with the requirements in 49.1 when subjected to the conditions described in 50.6.



CLAUSE	VERDICT	COMMENT
		<b><i>New clause added;</i></b>
50.3		Products weighing less than 30 lbs (13.6 kg) and utilizing wall or ceiling mount configurations shall comply with the requirements in 53.1 when subjected to the jarring described in 50.5. Products weighing 30 lbs (13.6 kg) or more and utilizing wall or ceiling mount configurations shall comply with the requirements in 50.1 when subjected to the jarring described in either 50.4 or 50.5. The direct impact shall be applied to the center of the side of the product intended to be adjacent to the mounting surface during intended mounting.
		<b><i>New clause added;</i></b>
50.4		An impact of 4.08 J (3 ft-lb) is to be applied directly to any non-display area of the product by means of a 1.18-lb (0.54 kg), 2-inch (51-mm) diameter steel sphere swung through a pendulum arc from a height (h) of 30.5 inches (775 mm). The at-rest suspension point of the steel sphere is to be 1-inch (25.4-mm) in front of the plane of the product to be impacted.
		<b><i>New clause added;</i></b>
50.6		Products intended to be mounted on a desktop shall be permitted provided both of the following conditions are met:  a) The product is supervised such that a tamper event/signal is enunciated when it is displaced from the mounting position; and b) The product operates as intended after being dropped four consecutive times onto a hardwood floor from a height of 775 mm. If the sample has corners, it is to be dropped on a different corner each time, selecting the four corners that appear to be most susceptible to damage. If the product has no corners, it is to be dropped on the four portions that appear to be most susceptible to damage. Reassembly without the use of tools is allowed provided no permanent damage has occurred.
66	Info	<b>Access Control Line Security</b>
66.2	Info	<b>Access Control Line Security Level II – Standard line security</b>
		Compromise attempt by any one of the following methods shall be detected:
66.2.2		c) Network Compromise – As applicable, minimum network security ensuring authorization of access to data within a network shall be documented in the installation instructions, to guard against such threats as: Denial of Service (DoS), spoofing, sniffing, hijacking, Trojans, viruses/ worms, and malware. d) Compatibility – As evaluated, the protected premises devices and the monitoring station equipment determined to be compatible must be specifically described in the product installation instructions.



CLAUSE	VERDICT	COMMENT
		<i>New section required;</i>
68		<p><b>Controlled and Delayed Egress Equipment and Systems Operation</b></p> <p>Equipment and systems intended to be used in controlled and delayed egress applications shall comply with this section (see standard for details).</p>
	Info	<b>MARKINGS</b>
71	Info	<b>Details</b>
		<i>New clause added;</i>
71.12		<p>In accordance with footnote b) of Table 46.1, cord-connected equipment provided with an electromagnetic radiation suppression filter and having a leakage current in excess of 0.5 or 0.75 mA (whichever applies) but less than 2.5 mA, shall be marked "WARNING – To reduce the risk of electric shock this equipment is provided with a grounding type power-supply cord. Connect equipment to a grounded receptacle," or the equivalent.</p>
		<i>New clause added;</i>
71.16		<p>The type of special locking device shall be plainly marked on the hardware assembly: "Controlled Egress Equipment and Systems or Delayed Egress Equipment and Systems."</p>
		<i>New clause added;</i>
71.17		<p>For delayed egress locking devices, the programmed time delay duration shall be plainly marked on the hardware assembly.</p>
90	Info	<b>Installation and Operating Instructions</b>
		<p>The instructions shall include at least the following:</p> <p>a) <u>Name or trademark of manufacturer.</u></p> <p>b) <u>Each applicable product model number as appropriate.</u></p> <p>c) <u>Document number, AND issue date and/or revision level.</u></p> <p>d) <u>Electrical ratings for all input and output circuits.</u></p> <p>e) <u>Typical installation drawing layouts and a complete representative installation wiring diagram(s) for the product(s) indicating recommended locations and specific reference that wiring methods used shall be in accordance with the National Electrical Code, ANSI/NFPA 70. Locations where installations are not recommended shall also be included.</u></p> <p>i) <u>A troubleshooting section including a description of the conditions that might be expected to result in false alarms or impaired operation of the product(s).</u></p> <p>j) <u>A description of any features provided to reduce the risk of fire, electric shock, or injury to persons and a warning against bypassing such features.</u></p> <p>k) <u>PoE-based access control systems that meet the requirements of this Standard shall specify UL 294 compliant equipment with which it is compatible with.</u></p> <p>l) <u>The essential information noted in 90.6.</u></p>
90.5		



CLAUSE	VERDICT	COMMENT
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***New clause added;***

As applicable, the following sections contain essential information that shall be provided in the installation instructions:

90.6

- a) 2.5, RF requirements
- b) 8.1, 8.4, access control performance levels;
- c) Section 10, Version Number;
- d) Section 18.2, Power-Limited/Class 2 or 3 Circuits;
- e) 18.3.2, field wiring terminals;
- f) 18.4.1(b), quick-connect terminals;
- g) 18.4.2 (a – c), field wiring terminal construction;
- h) 18.5, field wiring leads;
- i) 29.4, battery precautions;
- j) 34.6, Essential Computer Equipment;
- k) 34.7.4.1, Power over Communications Cable Equipment
- l) 34.4.2(b)(2). Table 34.1, communication protocols;
- m) Section 35, Normal Operation
- n) Section 36, Electronic Authentication;
- o) 38.6, special application circuits;
- p) 39.1.1, 39.1.7, power-limited circuits;
- q) 39.1.3, “AC power on” indicator;
- r) Sections 44 and 80, variable ambient conditions;
- s) Section 45, humidity conditions;
- t) 54.4.1 – Exception, 54.4.8, input/output circuit transients;
- u) 55.1 – Exception, AC induction;
- v) 63.3.2, 63.4.2, 63.5.2, 63.6.2, 87.2(a), installation tools;
- w) 71.1 – Exception No. 1, marking reference;
- x) 71.2 – 71.4, wiring and mounting;
- y) 71.11, separate grounding conductor;
- z) 87.3, 87.4, accessory wiring; and
- aa) 88.1, 89.3, accessory installation.

**CUSTOMERS PLEASE NOTE:** This Table and column “Verdict” can be used in determining how your current or future production is or will be in compliance with new/revised requirements.